Service Manual

ViewSonic VP950b
Model No VS11964
19" Color TFT LCD Display



Manufacture Date: Nov-06-07

Revision History

Revision	Date	Description of changes	Approval
A00	**Nov-06-07**	**Initial Release** T97HMJDKMWVSBNJ	**YG.WANG**

TABLE OF CONTENTS

1. Precautions And Safety Notices

1.1 SAFETY PRECAUTIONS

This monitor is manufactured and tested on a ground principle that a user's safety comes first. However, improper use or installation may cause damage to the monitor as well as the user. Carefully go over the following WARNINGS before installing and keep this guide handy.

WARNINGS

. This monitor should be operated only at the correct power sources indicated on the label on the rear end of the monitor. If you're unsure of the power supply in your residence, consult you local dealer or power company.
. Use only the special power adapter that comes with this monitor for power input.
. Do not try to repair the monitor your self as it contains no user-serviceable parts. This monitor should only be repaired by a qualified technician.
. Do not remove the monitor cabinet. There is high-voltage parts inside that may cause electric shock to human bodies, even when the power cord is unplugged.
. Stop using the monitor if the cabinet is damaged. Have it checked by a service technician.
. Put your monitor only in a clean, dry environment. If it gets wet, unplug the power cable immediately and consult your service technician.
. Always unplug the monitor before cleaning it .Clean the cabinet with a clean, dry cloth. Apply non-ammonia based cleaner onto the cloth, not directly onto the glass screen.
. Keep the monitor away from magnetic objects, motors, TV sets, and transformer.
. Do not place heavy objects on the monitor or power cord.

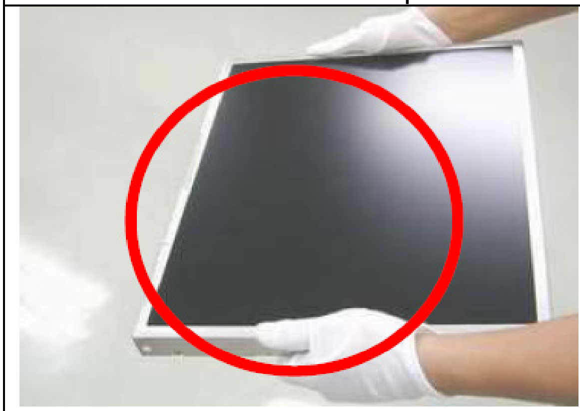
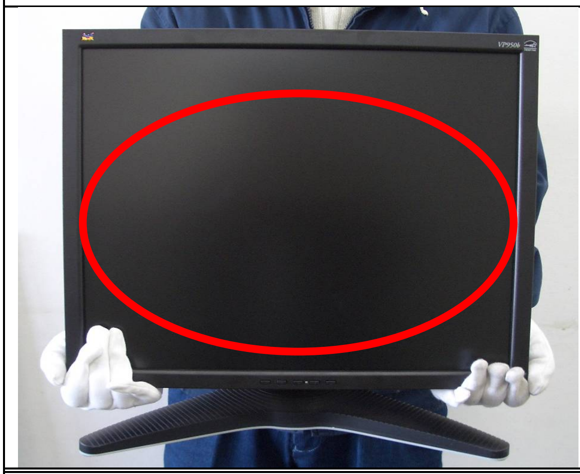
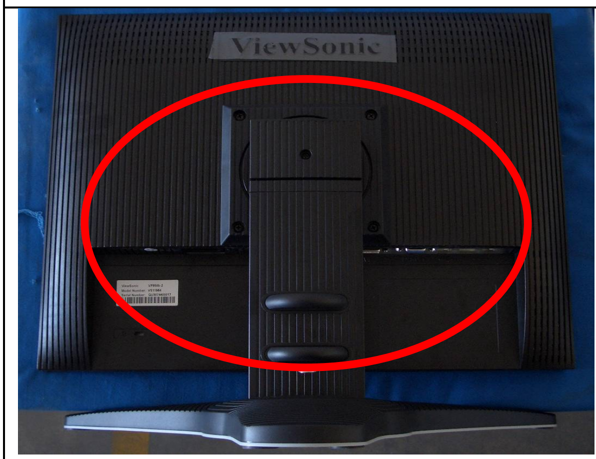
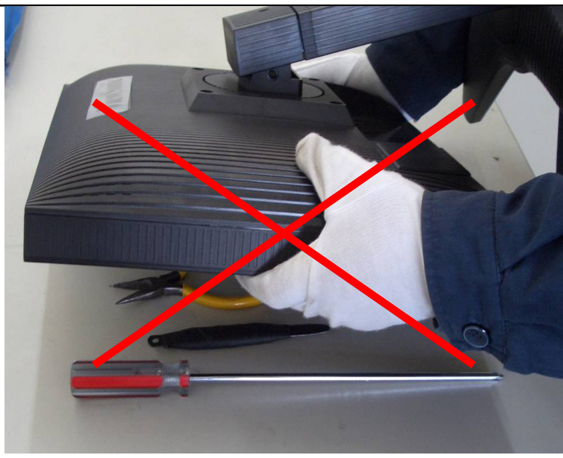
1.2 PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltages, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire ,or other hazards.

1.3 SERVICE NOTES

1. When replacing parts or circuit boards, clamp the lead wires around terminals before soldering.
2. When replacing a high wattage resistor(more than 1W of metal oxide film resistor) in circuit board, keep the resistor about 5mm away from circuit board.
3. Keep wires away from high voltage, high temperature components and sharp edges.
4. Keep wires in their original position so as to reduce interference.
5. Usage of this product please refer to also user's manual.

1.4 HANDING AND PLACING METHODS

Correct Methods:	Incorrect Methods:
Only touch the metal frame of the LCD panel or the front cover of the monitor. Do not touch the surface of the polarizer.	Surface of the LCD panel is pressed by fingers and that may cause “Mura.”
	
	
Take out the monitor with cushions	Taking out the monitor by grasping the LCD panel. That may cause “Mura.”
	

<table>
<tr><td>Place the monitor on the lap, the panel surface must be upwards.</td><td>The panel is placed facedown on the lap. That may cause “Mura.”</td></tr>
<tr><td></td><td></td></tr>
</table>

2. Specification

2.1 PRODUCT SPECIFICATIONS

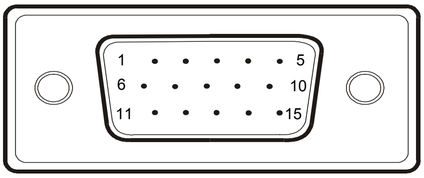
LCD	Type	19.0" (full 19" viewable diagonal area), TFT(Thin Film Transistor), Active Matrix SXGA LCD. 0.294mm pixel pitch
	Color Filter	RGB vertical stripe
	Glass Surface	Anti-Glare
Input Signal	Video Sync	RGB analog(0.7/1.0 Vp-p, 75 ohms) TMDS Digital(100 ohms) Separate Sync, Separate Sync, Sync on Green Fh:24-82 kHz, Fv:50-75 Hz
Compatibility	PC Macintosh	Up to 1280 x 1024 Non-interlaced Power Macintosh up to 1280 x 1024
Resolution	Recommended and supported	1280 x 1024 @ 60 Hz 1024 x768 @ 60, 70,72, 75 Hz 800 x 600 @ 56, 60, 72, 75 Hz 640 x 480 @ 60, 75 Hz 720 x 400 @ 70 Hz
Power	Voltage	100V~240 VAC, 50/60Hz (auto switch)
Display area	Full Scan	376.32mm(H) x 301.056mm(V) 14.8"(H) x 11.6"(V)
Operating conditions	Temperature Humidity Altitude	32°F to + 104°F(0°C to + 40°C) 20%C to + 90%(non-condensing) To 10,000 feet
Storage conditions	Temperature Humidity Altitude	-4°F to + 140°F(-20°C to + 60°C) 5%C to + 90%(non-condensing) To 40,000 feet
Dimensions	Physical	412.2mm(W) x 490.7mm(H) x 278.5mm(D) 16.2"(W) x 15.4"(H) x 11.0"(D)
Weight	Physical	13.6 Ib (6.2 kg)
Regulations		BSMI, VCCI, CCC, PSB, C-Tick, MIC, CE, Ukraine, TUV-S/IRAM, Ergo, Gost-R/Hygienic, TCO'03, SASO, UL/cUL, FCC-B, ICES-B, GS, NOM, ENERGY STAR®
Power saving modes	On Off	36W(Typical; no USB peripheral plugged) (blue LED) <1W

Preset Timing Mode (pre-adjusted to VESA® 1280 x 1024 @ 60 Hz)
Warning: Do not set the graphics card in your computer to exceed these refresh rates; doing so may result in permanent damage to the LCD display.

[1] Macintosh computers older than G3 require a ViewSonic® Macintosh adapter. To order an adapter, contact ViewSonic.

2.2 INTERFACE DESCRIPTION

D-SUB 15 PIN CONNECTOR

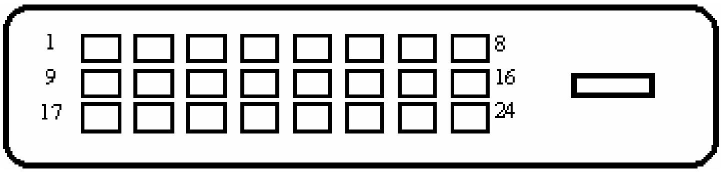


Pin Number	Pin Function
1	Red video input
2	Green video input
3	Blue video input
4	No Connection
5	Ground
6	Red video ground
7	Green video ground
8	Blue video ground
9	+5V
10	H/V sync ground
11	No connection
12	(SDA)
13	Horizontal sync (Composite sync)
14	Vertical sync
15	(SCL)

SIGNAL LEVEL

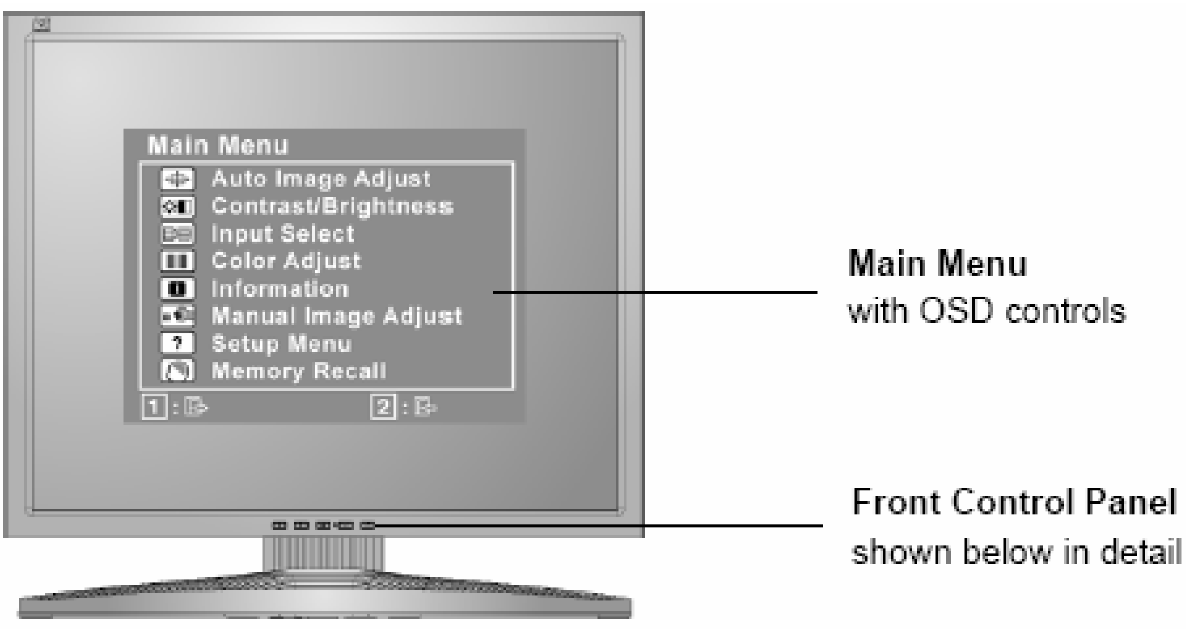
CONNECTOR	SIGNAL	DESCRIPTION
R	Red	0.7vp-p（VIDEO）
G	Green	0.7vp-p（VIDEO）
B	Blue	0.7vp-p（VIDEO）
H	H/Sync	TTL positive or negative
V	V/Sync	TTL positive or negative
SDA	DDC1/2B	TTL
SCL	DDC1/2B	TTL

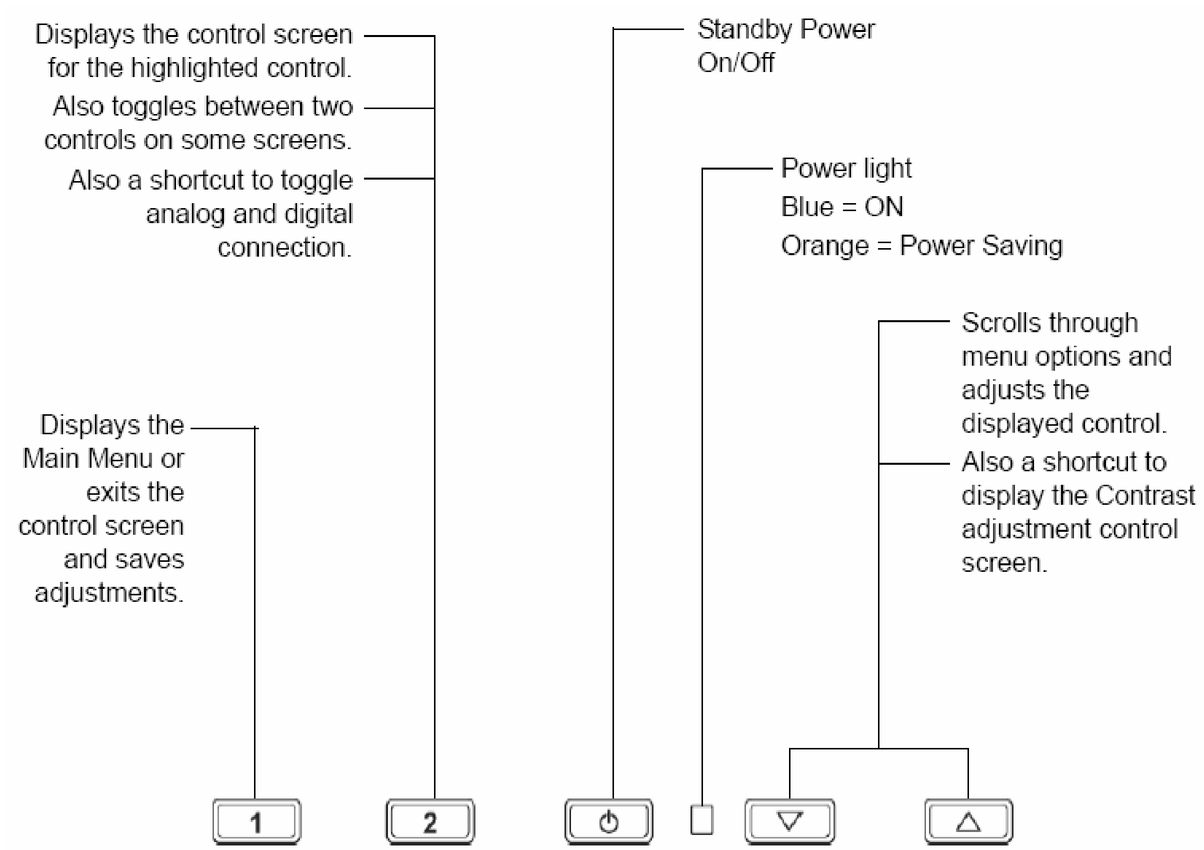
DVI-D 24 PIN CONNECTOR



Pin No.	Signal Name	Description
1	RX2-	TMDS negative differential input, channel 2
2	RX2+	TMDS positive differential input, channel 2
3	GND	Logic Ground
4	Reserved 4	Reserved. No connection
5	Reserved 5	Reserved. No connection
6	DDC-CLK	DDC2B Clock
7	DDC-DAT	DDC2B Data
8	Reserved 8	Reserved. No connection
9	RX1-	TMDS negative differential input, channel 1
10	RX1+	TMDS positive differential input, channel 1
11	GND	Logic Ground
12	Reserved 12	Reserved. No connection
13	Reserved 13	Reserved. No connection
14	VCCX	Power
15	GND	Logic Ground
16	SENS	SENSE Pin, Pull High
17	RX0-	TMDS negative differential input, channel 0
18	RX0+	TMDS positive differential input, channel 0
19	GND	Logic Ground
20	Reserved 20	Reserved. No connection
21	Reserved 21	Reserved. No connection
22	GND	Logic Ground
23	RXC+	TMDS positive differential input, reference clock
24	RXC-	TMDS negative differential input, reference clock

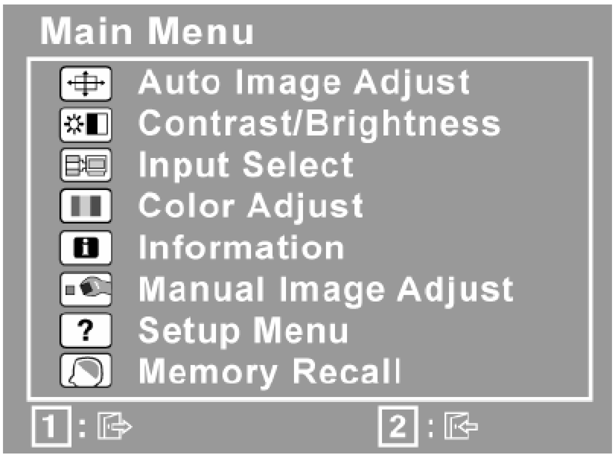
3. Front Panel Function Controls And Indicators





Do the following to adjust the display setting:

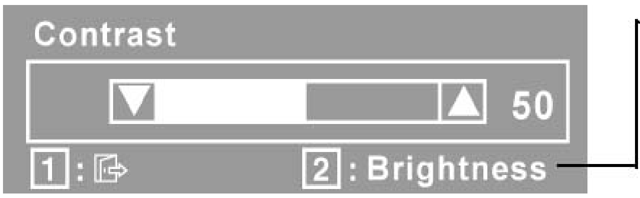
1. To display the Main Menu, press button [1].



NOTE: All OSD menus and adjustment screens disappear automatically after about 15 seconds. This is adjustable through the OSD timeout setting in the setup menu.

2. To select a control to adjust, press ▲or ▼ to scroll up or down in the Main Menu.

3. After the desired control is selected, press button [2]. A control screen like the one shown below appears.



The line at the bottom of the screen shows the current functions of buttons 1 and 2: Exit or select the Brightness control.

4. To adjust the control, press the up ▲ or▼ down buttons.

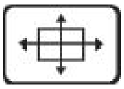
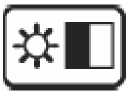
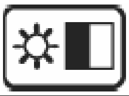
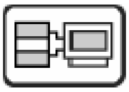
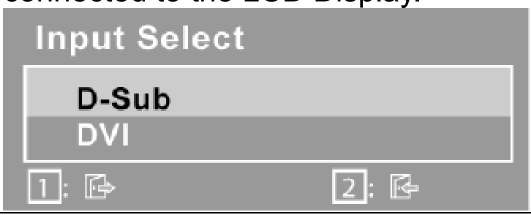
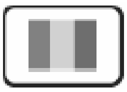
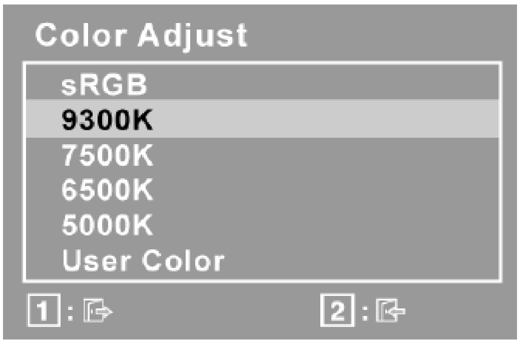
5. To save the adjustments and exit the menu, press button [1] *twice*.

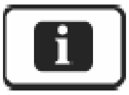
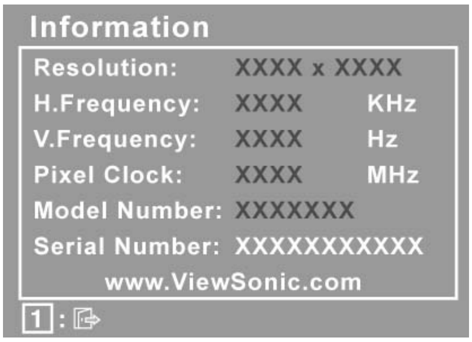
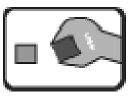
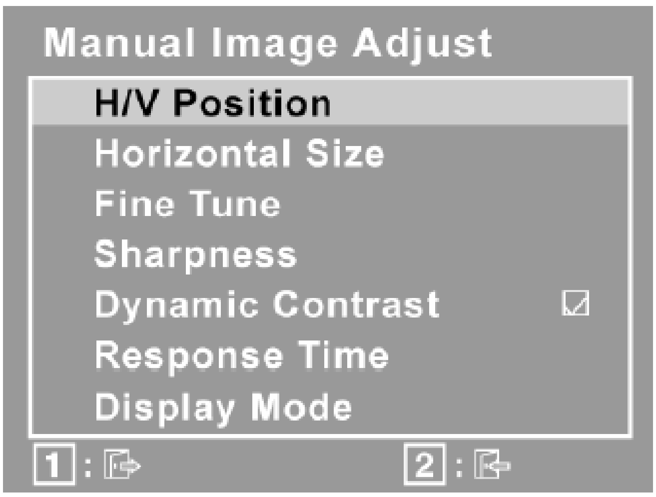
The following tips may help you optimize your display:

- Adjust the computer's graphics card so that it outputs a 1280 x 1024 @ 60Hz video signal to the LCD display. (Look for instructions on "changing the refresh rate" in the graphics card's user guide.)
- If necessary, make small adjustments using H. POSITION and V. POSITION until the screen image is completely visible. (The black border around the edge of the screen should barely touch the illuminated "active area" of the LCD display.)

Main Menu Controls

Adjust the menu items shown below by using the up ▲ and down ▼ buttons.

Control	Explanation
	**Auto Image Adjust** automatically sizes, centers, and fine tunes the video signal to eliminate waviness and distortion. Press the [2] button to obtain a sharper image. **NOTE:** Auto Image Adjust works with most common video cards. If this function does not work on your LCD display, then lower the video refresh rate to 60 Hz and set the resolution to its pre-set value.
	**Contrast** adjusts the difference between the image background (black level) and the foreground (white level).
	**Brightness** adjusts background black level of the screen image.
	**Input Select** toggles between inputs of you have more than one computer connected to the LCD Display. 
	**Color Adjust** provides several color adjustment modes, including preset color temperatures and a User Color mode which allows independent adjustment of red (R), green (G), and blue (B). The factory setting for this product is 6500K (6500 Kelvin).  **sRGB-**This is quickly becoming the industry standard for color management, with support being included in many of the latest applications. Enabling this setting allows the LCD display to more accurately display colors the way they were originally intended. Enabling the intended. Enabling the sRGB setting will cause Contrast and Brightness adjustments to be disabled. **9300K-**Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting).

	7500K-Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting). **6500K-**Adds red to the screen image for warmer white and richer red. **5000K-**Adds red to the screen image for warmer white and richer red. **User Color** Individual adjustments for red (R), green (G), and blue (B). **1.** To select color (R, G or B) press button [2]. **2.** To adjust selected color, press ▼ and ▲. **Important:** If you select **RECALL** from the Main Menu when the product is set to a Preset Timing Mode, colors return to the 6500K factory preset.
	**Information** displays the timing mode (video signal input) coming from the graphics card in the computer, the LCD model number, the serial number, and the ViewSonic® website URL. See your graphics card's user guide for instructions on changing the resolution and refresh rate (vertical frequency). **NOTE:** VESA 1280 x 1024 @ 60Hz (recommended) means that the resolution is 1280 x 1024 and the refresh rate is 60 Hertz. 
	**Manual Image Adjust** display the Manual Image Adjust menu  **H./V. Position (Horizontal/Vertical Position)** moves the screen image left or right and up or down.

H./Size (Horizontal Size) adjusts the width of the screen image.

Fine Tune sharpens the focus by aligning text and/or graphics with pixel boundaries.
NOTE: Try Auto Image Adjust first.

Sharpness adjusts the clarity and focus of the screen image.

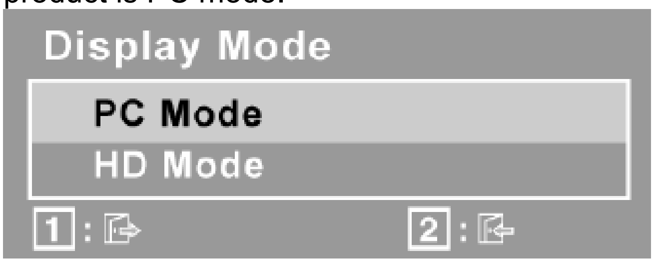
Dynamic Contrast allows the user to turn the contrast ratio enhancement on or off.

Response Time adjusts the response time of liquid-crystal display for image quality enhancement.

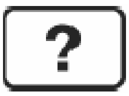


Standard sets response time to normal speed.
Advanced sets response time to higher speed.
Ultra Fast sets response time to highest speed.

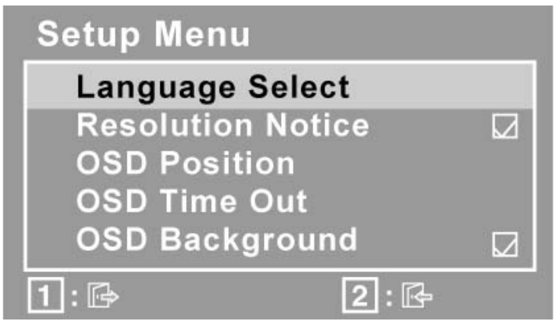
Display Mode provides two color space modes. The factory setting for this product is PC mode.



PC Mode sets color space to RGB for PC timing mode.
HD Mode sets color space to YUV for HD timing mode.



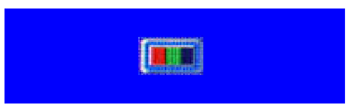
Setup Menu displays the menu shown below:

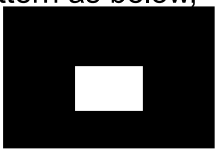


Language Select allows the user to choose the language used in the menus

	and control screens. **Resolution Notice** advises the optimal resolution to use. **OSD Position** allows the user to move the OSD menus and control screens. **OSD Timeout** sets the length of time the OSD screen is displayed. For example, with a "15 second" setting, if a control is not pushed within 15 seconds, the display screen disappears. **OSD Background** allows the user to turn the OSD background On or Off.
	**Memory Recall** returns the adjustments back to factory settings if the display is operating in a factory Preset Timing Mode listed in the Specifications of this manual. **Exception** This control does not affect changes made with the User Color control, Language Select or Power Lock setting.

SHORT CUTS FUNCTION FROM THE BUTTONS

[1]	Main Menu
[2]	Input toggle (Analog or Digital; refer to Appendix D)
[▼]	To immediately activate Brightness and menu. It should be change to Contrast OSD by push button[2] *1 refer to the Contrast OSD. *2 Under sRGB or DCR mode, this function is disable.
[▲]	To immediately activate Contrast menu. It should be change to Brightness OSD by push button[2] *1 refer to the Brightness OSD. *2 Under sRGB or DCR mode, this function is disable.
[▼] + [▲]	Recall both of Contrast and Brightness to default without OSD message.
[1] + [2]	Toggle 720x400 and 640x400 mode when input 720x400 or 640x400 mode
[1] + [▼] + [▲] (Keep pushing 5 sec)	White Balance 1. It will not shown on user's guide 2. OSD message as below,  (Image = no blanking) 3. Recommend environment 3.1. Optical (Best) input timing = 640 x 480 @ 60Hz;

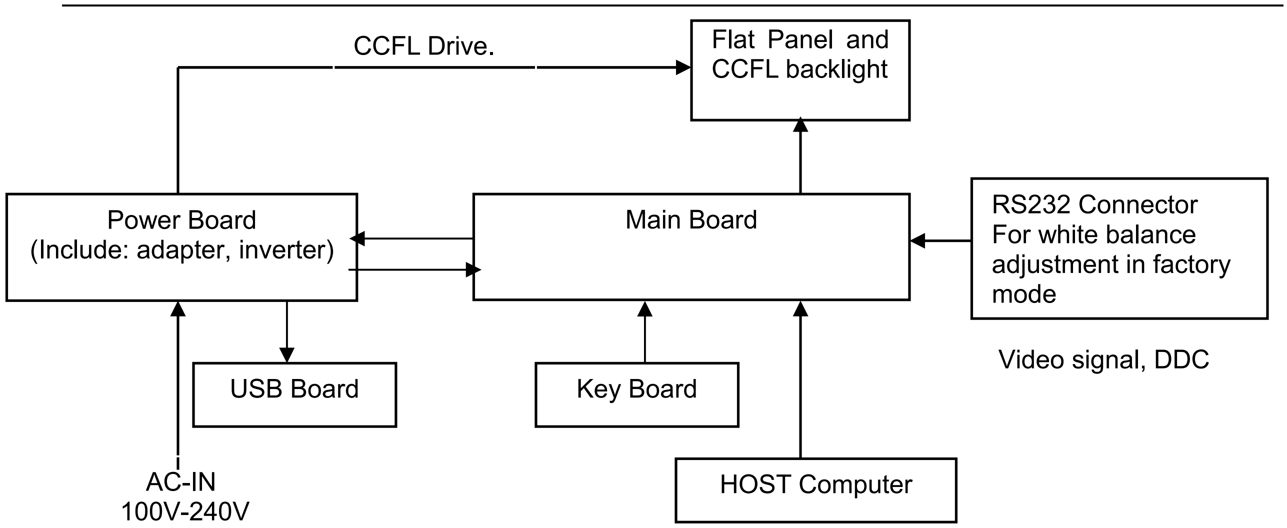
	Following timing modes also recommended, 800 x 600 @ 60 Hz 1024 X 768 @ 60 Hz 3.2. Pattern as below, 
[1] + [▲]	OSD Lock / Unlock
[1] + [▼]	Power Lock / Unlock
[2] + [▼]	Toggle DDC/CI and DDC/2B (DDC/CI enable/disable) and show following message for 3 seconds, When switch to DDC/CI DDC/CI When switch to DDC/2B DDC/2B Default = DDC/CI
[1] + [▼] + [2]	Disable Theft Defence function
No signal + [⏻] + [2]	Burning mode
signal + [2]+ [⏻]	Factory Mode
Remark : All the short cuts function are only available while OSD off	

4. Circuit Description

4.1 LCD MONITOR DESCRIPTION

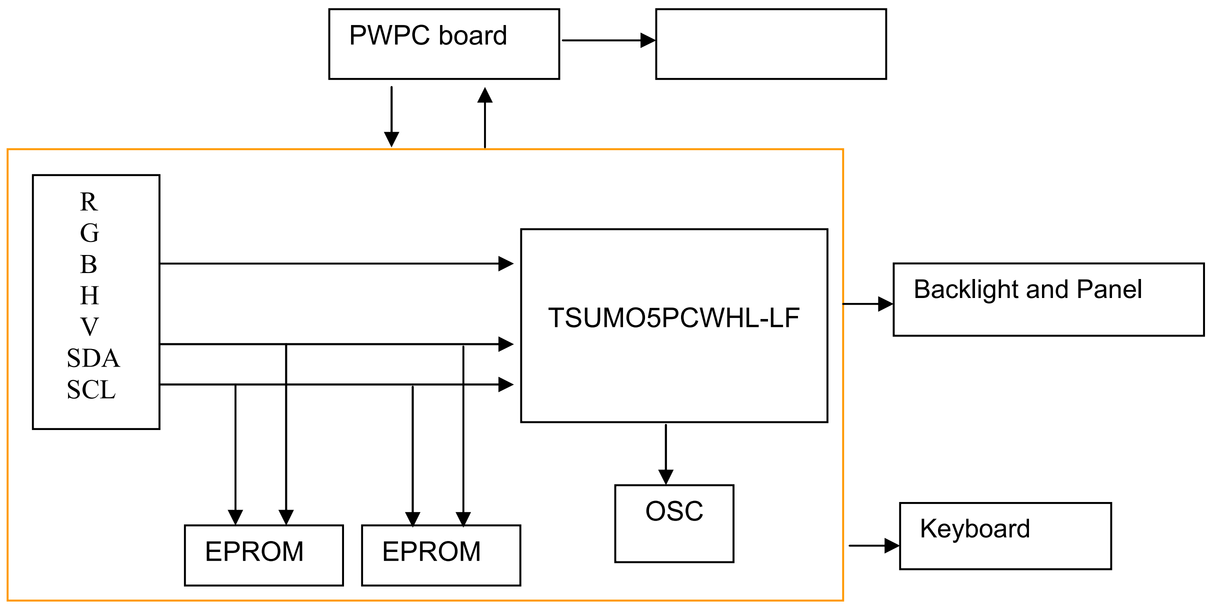
The LCD MONITOR will contain a Main Board, an Power Board, Key Board which house the flat panel control logic, brightness control logic and DDC.

Monitor Block Diagram



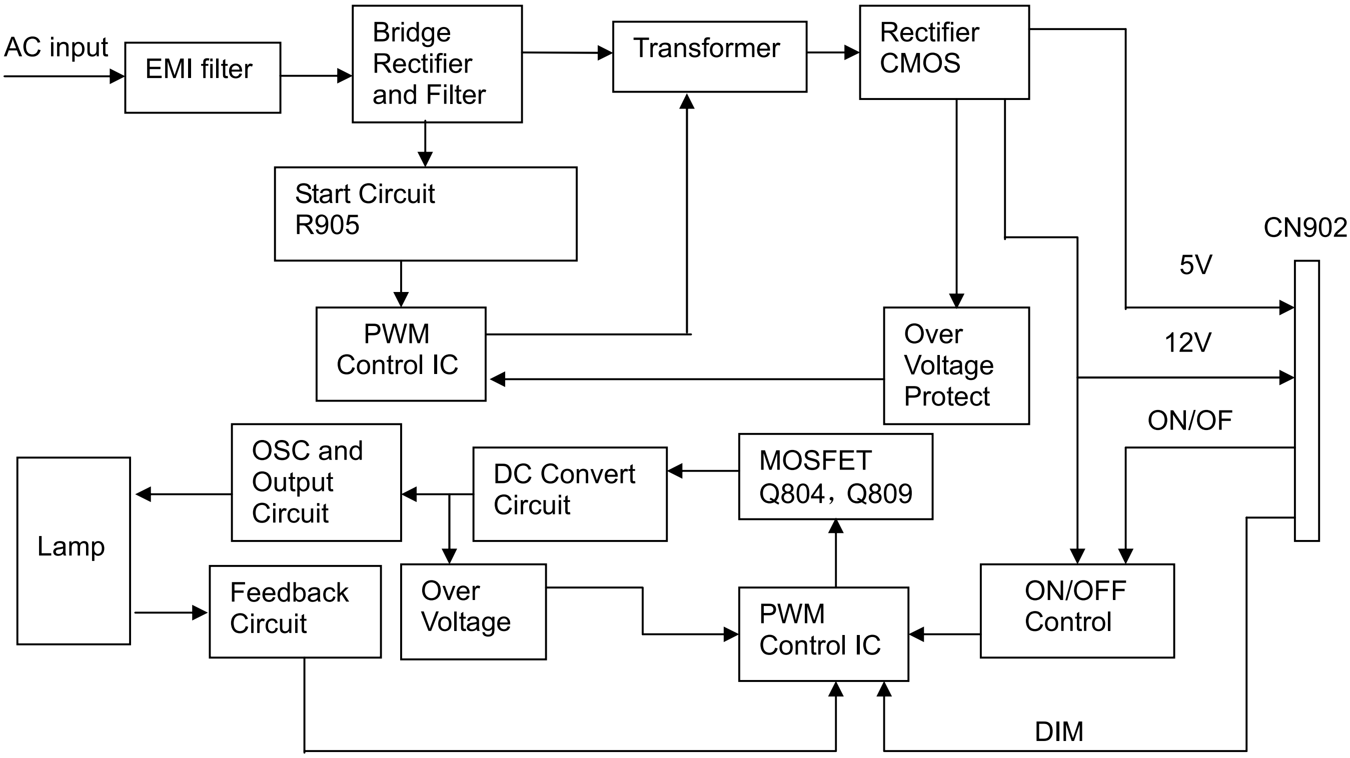
4.2 MAIN BOARD BLOCK FUNCTION DESCRIPTION

The main board contains panel control logic, brightness control logic, DDC and DC convert DC circuit and so on.



4.3 PWPC BOARD BLOCK FUNCTION DESCRIPTION

PWPC board combines to adapter and inverter, Adapter which commonly consists of bridge rectifier and filter, start circuit, PWM control circuit, protection circuits and convert to 12V, 5V DC voltage by input 90V-240V AC voltage that provide power supply for each chips in the main board and inverter. Inverter is DC TO AC circuit. It changes the 12v DC of power supply to about 600-800v AC that drives the backlight. It mostly consists of starting circuit, PWM controller, DC changing circuit, LC surging circuit, output circuit and protection circuit etc.



4.4 INTRODUCTION OF IC

TSUMO5PCWHL-LF (U401): integrate ADC, OSD, SCALER, MCU, LVDS, convert analog RGB into digital and room and shrink scaling output to LCD panel.

PIN Function:

Pin	Pin Name	Function
37	SDO	SPI flash serial data output
38	CSZ	SPI flash chip select
39	SCK	SPI flash serial select
40	SDI	SPI flash serial data input
30	DDCA_SDA/RS232_TX	DDC data for analog interface; 4mA driving strength UART transmitter/GPIO
31	DDCA_SCL/RS232_RX	DDC data for analog interface UART transmitter/GPIO
100	DDCD_SDA	DDC Data and HDCP Slave Port Data for DVI Interface; 4mA driving strength
1	DDCD_SCL	DDC Clock and HDCP Slave Port Data for DVI Interface; 4mA driving strength
80	BYPASS	For External Bypass Capacitor
84	RST	Chip reset; High reset
52	VCTRL	Regulator control
27	HSYNCO	Analog HSYNC input
28	VSYNCO	Analog VSYNC input
26	REFP	Internal ADC top de-coupling pin
25	REFM	Internal ADC bottom de-coupling pin
15	REXT	External resistor 390 ohm to AVDD_33
53、52	MODE[1：0]	Input: Chip Configuration Input MODE[1:0] — Chip Operation 00 — Normal Operation
96	XIN	Xin; Crystal Oscillator Input
97	XOUT	Xout; Crystal Oscillator Output
8,14,16,24, 98	AVDD__33	DVI Power 3.3V
32,49,56,75	VDDP	Digital Output Power 3.3V
34,51,66,82	VDDC	Digital Core Power 1.8V
2,5,11,29,3 3,50,57,76, 79,83	GND	Ground

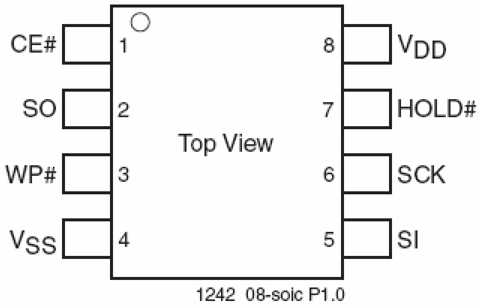
AP1117E33LA (U707,U705): DC power convert, convert to 3.3v.

AZ1117D-1.8EI (U708): DC power convert, convert to 1.8v.

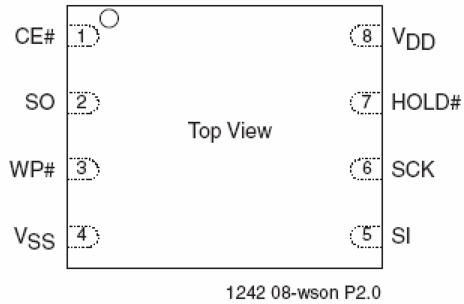
SST25LF020A-33-4C-SAE (U402): SST's serial flash family features a four-wire, SPI-com-patible interface that allows for a low pin-count package occupying less board space and ultimately lowering total system costs. The

SST25LF020A/040A devices significantly improve performance, while lowering power consumption. The total energy consumed is a function of the applied voltage, current, and time of application. The SST25LF020A/040A devices operate with a single 3.0-3.6V power supply. The SST25LF020A devices are offered in an 8-lead SOIC 150 mil body width (SA) package.

Pin Diagram:



8-LEAD SOIC

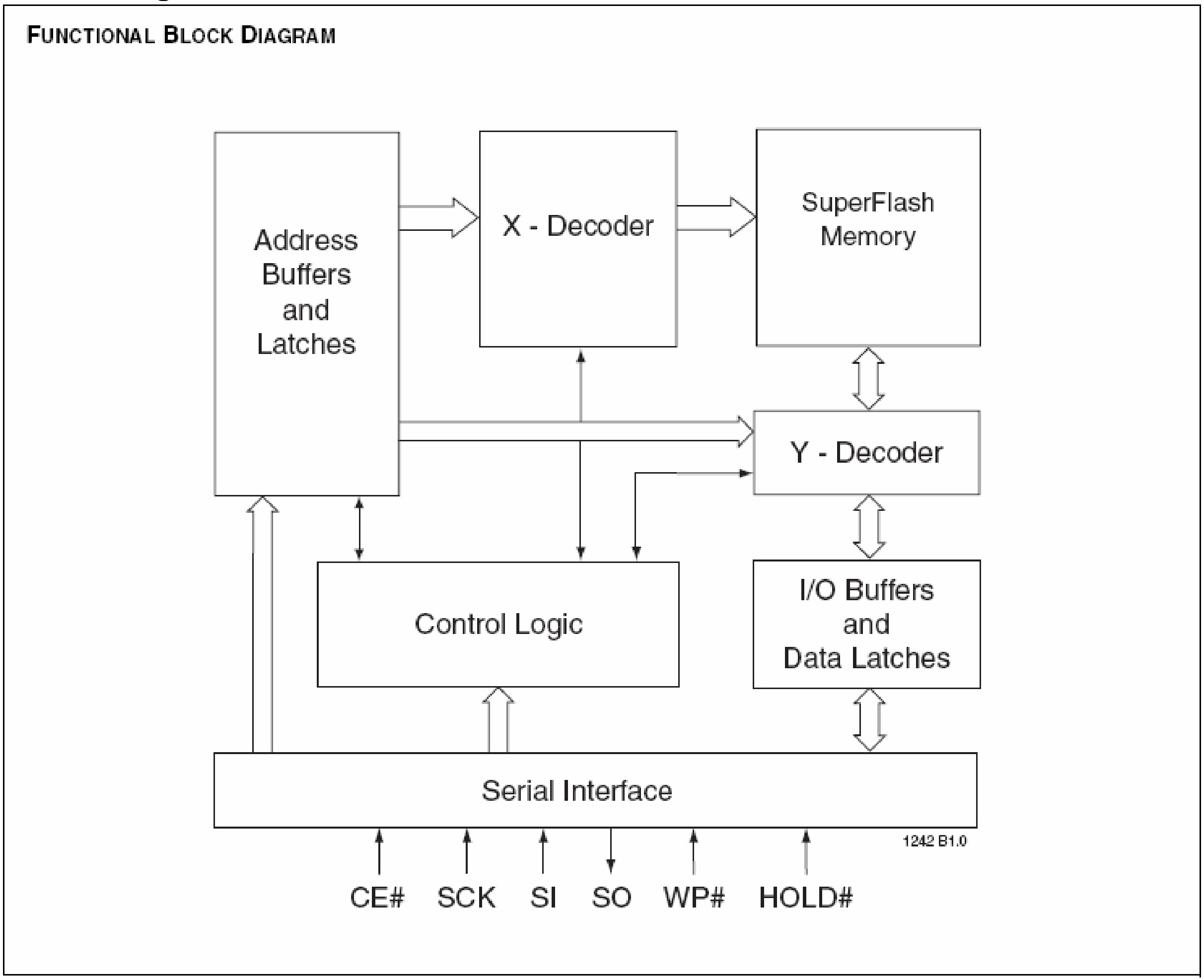


8-CONTACT WSON

PIN Descriptions:

Symbol	Pin Name	Functions
SCK	Serial Clock	To provide the timing of the serial interface. Commands, addresses, or input data are latched on the rising edge of the clock input, while output data is shifted out on the falling edge of the clock input.
SI	Serial Data Input	To transfer commands, addresses, or data serially into the device. Inputs are latched on the rising edge of the serial clock.
SO	Serial Data Output	To transfer data serially out of the device. Data is shifted out on the falling edge of the serial clock.
CE#	Chip Enable	The device is enabled by a high to low transition on CE#. CE# must remain low for the duration of any command sequence.
WP#	Write Protect	The Write Protect (WP#) pin is used to enable/disable BPL bit in the status register.
HOLD#	Hold	To temporarily stop serial communication with SPI flash memory without resetting the device.
V_{DD}	Power Supply	To provide power supply(3.0-3.6V)
V_{SS}	Ground	

Circuit Diagram



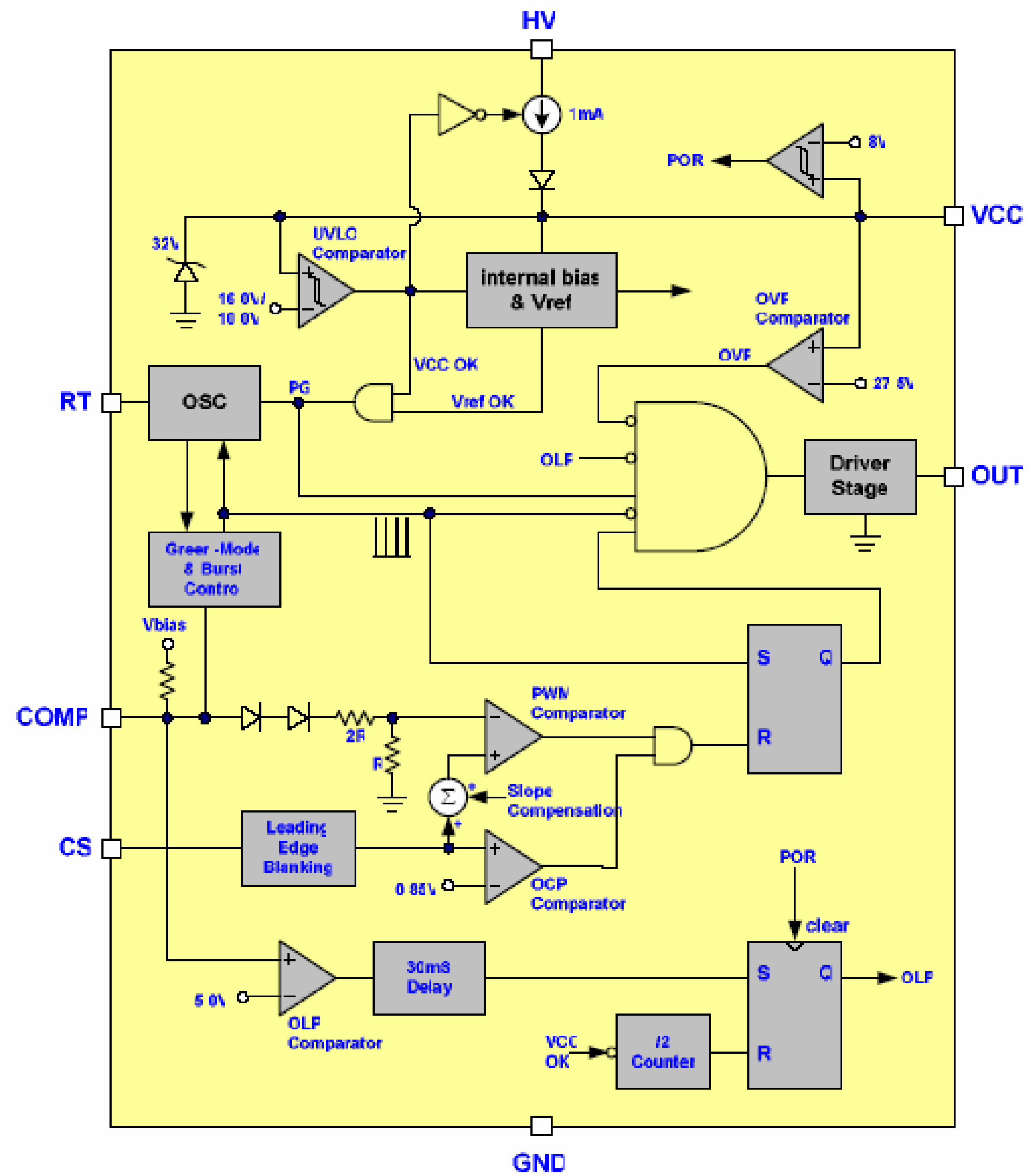
LD7575 PS (IC901): The LD7575 is a current-mode PWM controller with excellent power-saving operation. The embedded over voltage protection, over load protection and the special green-mode control provide the solution for users to design a high performance power circuit easily and etc. The function of each pin and the inside circuit diagram are as follows:

PIN Descriptions:

Pin	Name	Function
1	RT	This pin is to program the switching frequency. By connection a resistor to ground to set the switching frequency.
2	COMP	Voltage feedback pin(same as the COMP pin in UC384X), By connecting a photo-coupler to close the control loop and achieve the regulation.
3	CS	Current sense pin, connect to sense the MOSFET current
4	GND	Ground
5	OUT	Gate drive output to drive the external MOSFET
6	VCC	Supply voltage pin

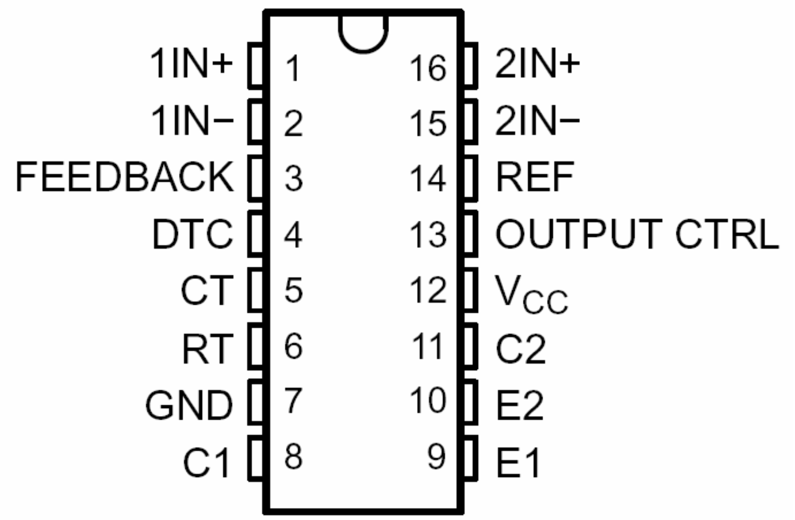
7	NC	Unconnected Pin
8	HV	Connect this pin to positive of bulk capacitor to provide the startup current for the controller, when Vcc voltage trips the UVLO(on), this HV loop will be off to save the power loss on the startup circuit.

Block Diagram

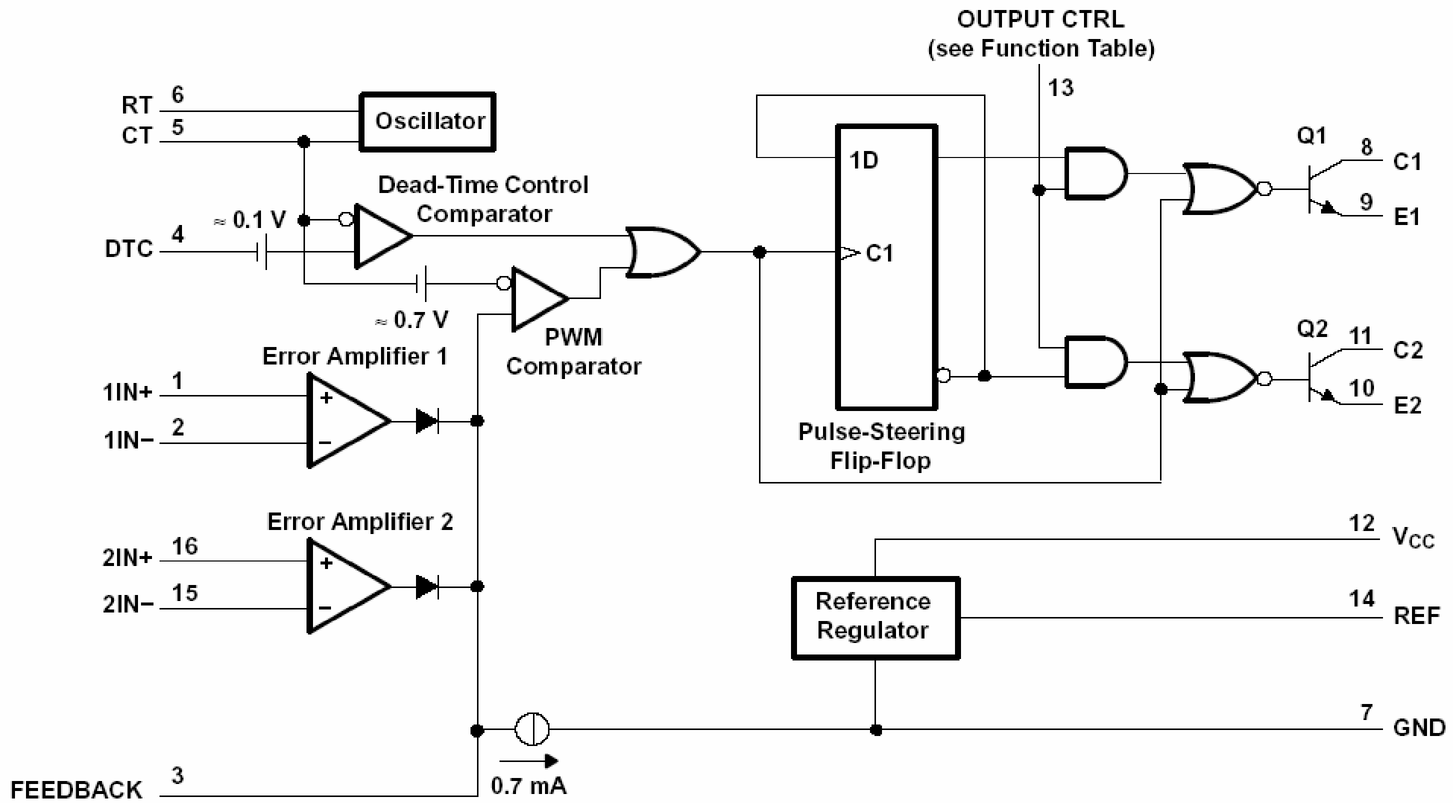


TL494 (IC801): The TL494 incorporates all the functions required in the construction of a pulse-width-modulation (PWM) control circuit on a single chip. Designed primarily for power-supply control, this device offers the flexibility to tailor the power-supply control circuitry to a specific application.

PIN Descriptions:

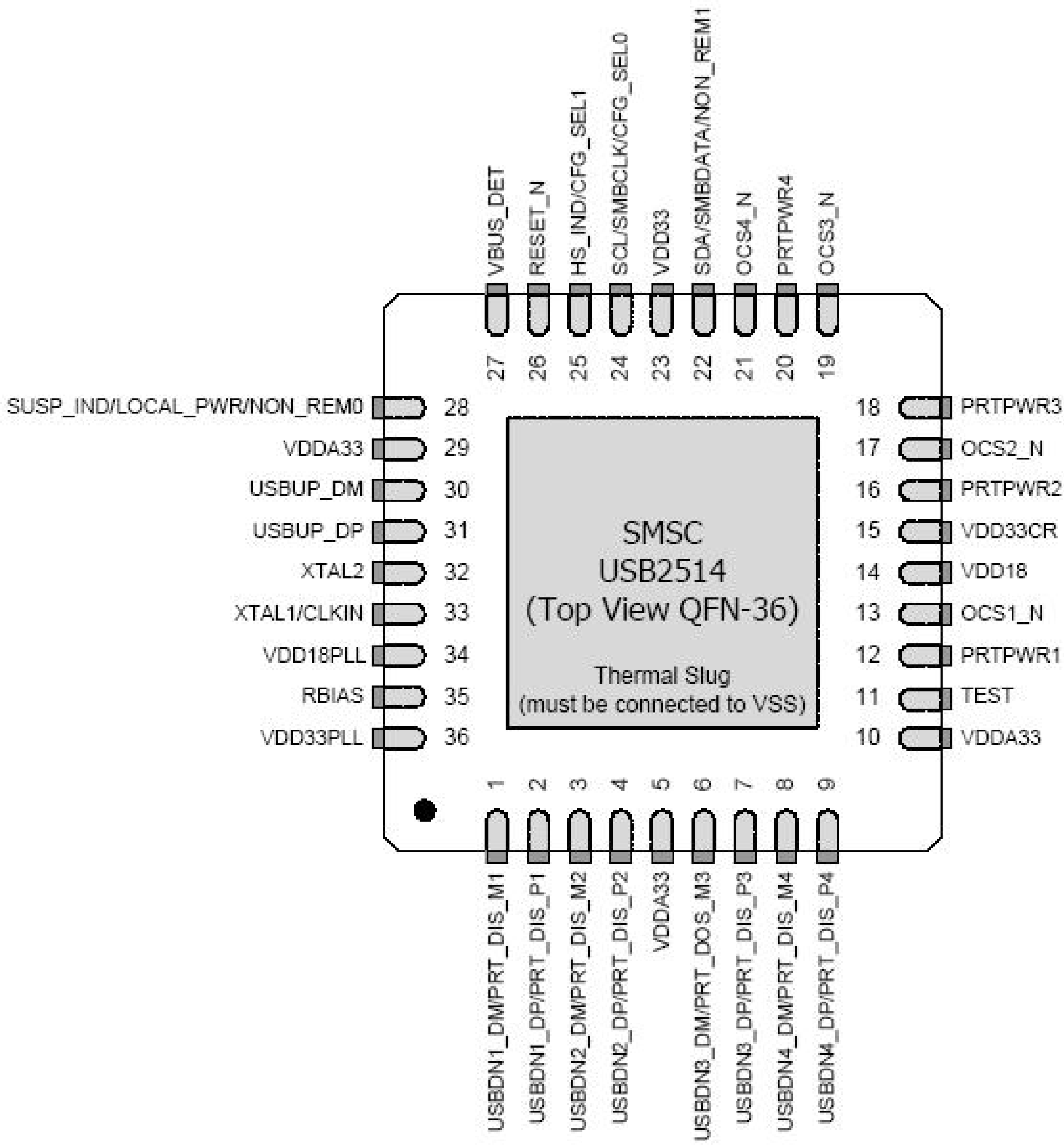


FUNCTIONAL BLOCK DIAGRAM

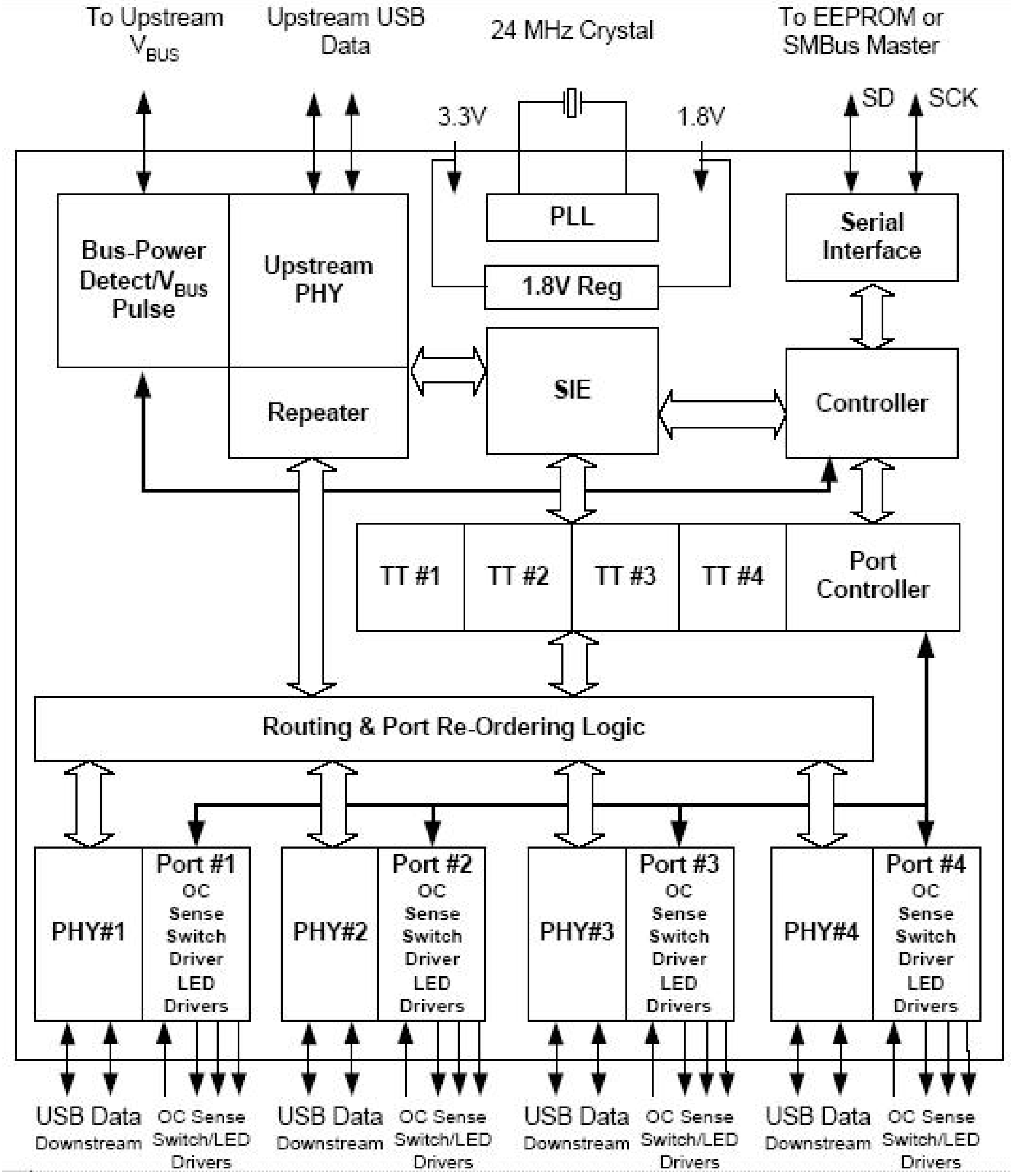


USB2514 (U701): The SMSC 4-Port Hub is low power, MTT(multi transaction translator) hub controller IC with 4 downstream ports for embedded USB solutions. The 4-Port Hub supports Low-Speed, Full-Speed, and High-Speed downstream devices on all of the enabled downstream ports. The configuration and the inside circuit diagram are as follows:

PIN Configuration:

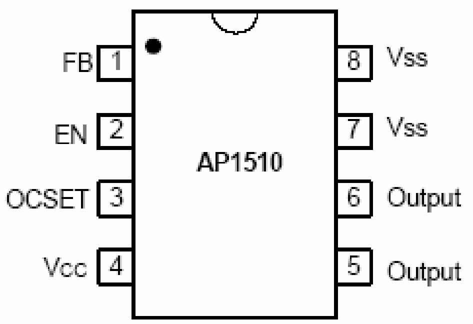


Block Diagram



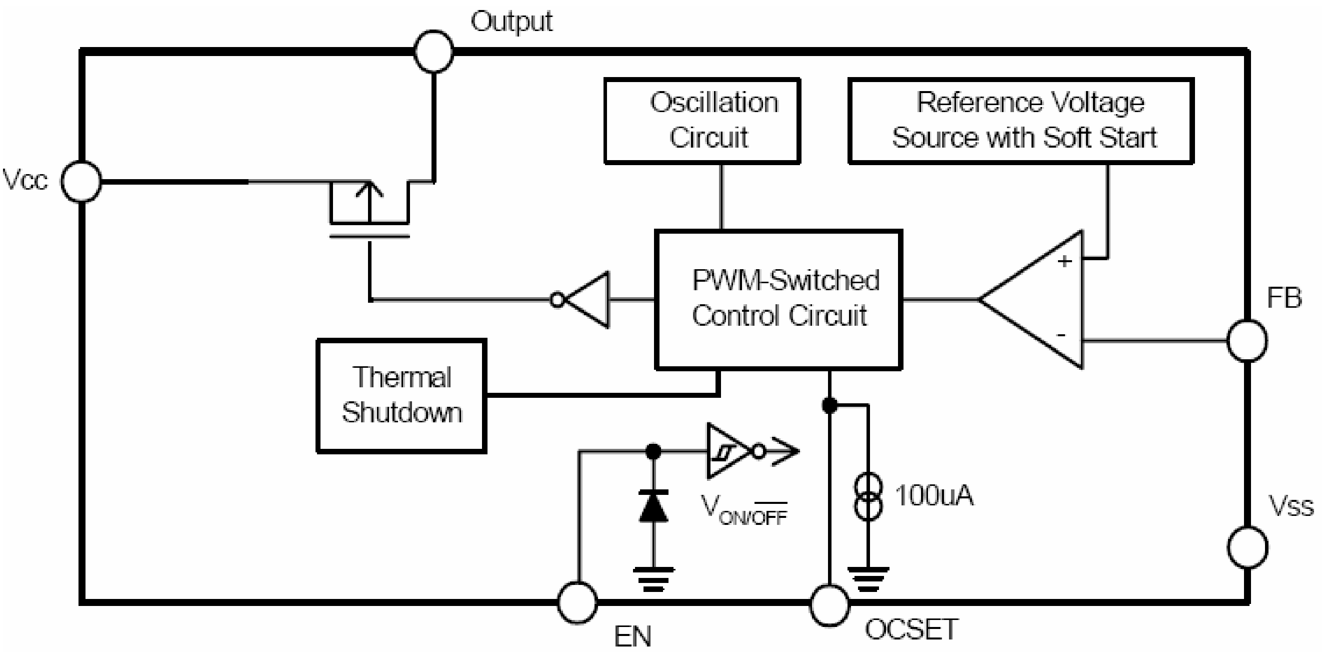
AP1510SA (U704): AP1510 consists of step-down switching regulator with PWM control. These devices include a reference voltage source, oscillation circuit, error amplifier, internal PMOS and etc.

PIN Descriptions:



Name	Pin	Description
FB	1	Feedback pin.
EN	2	Power-off pin H: Normal operation (Step-down operation) L: Step-down operation stopped (All circuits deactivated)
OCSET	3	Add an external resistor to set max output current.
Vcc	4	IC power supply pin
Output	5、6	Switch Pin. Connect external inductor/diode here. Minimize trace area at this pin to reduce EMI.
Vss	7、8	GND Pin

Block Diagram:



5. Adjustment Procedure

5.1 ADJUSTMENT CONDITIONS AND PRECAUTIONS

1. Approximately 30 minutes should be allowed for warm up before proceeding.
2. Adjustments should be undertaken only on those necessary elements since most of them have been carefully preset at the factory.
3. ESD protection is needed before adjustment.

5.2 MAIN ADJUSTMENTS

NO.	FUNCTIONS	DESIGNATION
1.	White Balance	Function Key
2.	Geometry	Function Key

5.3 ALIGNMENT PROCEDURES

Approximately 30 minutes should be allowed for warm up before proceeding White-Balance adjustment.

1. Adjust of White Balance

1.) How to do the CA-210 MEM .Channel setting

A、Reference to CA-210 user guide

B、Use “ **MODE**” key to modify **x**、**y**、**Lv** value and use “**MEMORY CH**” key to modify the TEXT description Following is the procedure to do white-balance adjust

2.) Setting the color temp. You want

A、MEM.CHANNEL1 (9300 color):
9300 color temp. parameter is x = 0.283 ±0.003; y = 0.298 ±0.003;
Lv ≥ 143 cd/m^2,

B、MEM.CHANNEL 1 (7500 color):
7500 color temp. parameter is x = 0.299±0.003; y = 0.316 ±0.003;
Lv ≥ 165cd/m^2,

C、MEM.CHANNEL1 (6500 color):
6500 color temp. parameter is x = 0.313±0.003; y = 0.329 ±0.003;
Lv ≥ 187cd/m^2,

D、MEM.CHANNEL 1 (5000 color):
5000 color temp. parameter is x = 0.346±0.003; y = 0.359 ±0.003;
Lv ≥ 165cd/m^2,

E、MEM.CHANNEL1 (SRGB color):
SRGB color temp. parameter is x =0.313±0.003; y=0.329±0.003; Lv≥187cd/m^2,

3.) Into factory mode of VP950:

First Power off, then press Switch 1 button along with press Power button will activate the factory mode, then MCU will do AUTO LEVEL automatically. Meanwhile press MENU the OSD screen will located at **LEFT TOP OF PANEL**.

4.) Bias adjustment :

Set the **Contrast** to 70，Adjust the **Brightness** to 100.

5.) Gain adjustment :

Move cursor to “-F-” and press MENU key

A、Adjust 9300 color-temperature

(1)、Switch the CA-210 to **x**、**y**、**Lv -Mode** (with press “MODE” button)
(2)、Switch the MEM. channel to Channel 1 (with up or down arrow on CA-210)
(3)、The LCD-indicator on CA-210 will show x=0.283±0.003, y=0.298±0.003, Lv≥143cd/m^2
(4) Adjust the R G B of color3 on factory window until CA210 indicator reached x=0.283±0.003, y=0.298±0.003, Lv≥143cd/m^2

B、Adjust 7500 color-temperature

(1)、Switch the CA-210 to **x**、**y**、**Lv -Mode** (with press “MODE” button)
(2)、Switch the MEM .channel to Channel 1(with up or down arrow on CA-210)
(3)、The LCD-indicator on CA-210 will show x=0.299±0.003, y=0.316±0.003, Lv≥165 cd/m^2
(4)、Adjust the R G B of color3 on factory window until CA210 indicator reached x = 0.299±0.003; y = 0.316 ±0.003; Lv≥165cd/m^2

C、Adjust 6500 color-temperature

(1)、Switch the CA-210 to **x**、**y**、**Lv -Mode** (with press “MODE” button)
(2)、Switch the MEM .channel to Channel 1 (with up or down arrow on CA-210)
(3)、The LCD-indicator on CA-210 will show x=0.313±0.003, y=0.329±0.003, Lv≥187cd/m^2
(4) Adjust the R G B of color3 on factory window until CA210 indicator reached x=0.313±0.003, y=0.329±0.003, Lv≥187 cd/m^2

D、Adjust 5000 color-temperature

(1)、Switch the CA-210 to **x**、**y**、**Lv -Mode** (with press “MODE” button)
(2)、Switch the MEM .channel to Channel 1(with up or down arrow on CA-210)
(3)、The LCD-indicator on CA-210 will show x=0.346±0.003, y=0.359±0.003, Lv≥165 cd/m^2
(4)、Adjust the R G B of color3 on factory window until CA210 indicator reached x = 0.346±0.003; y = 0.359±0.003; Lv≥165 cd/m^2

E、Adjust SRGB color-temperature

(1)、Switch the CA-210 to **x**、**y**、**Lv -Mode** (with press “MODE” button)
(2)、Switch the MEM .channel to Channel 1 (with up or down arrow on CA-210)
(3)、The LCD-indicator on CA-210 will show x=0.313±0.003, y=0.329±0.003, Lv≥187 cd/m^2

(4)、Adjust the R G B of color3 on factory window until CA210 indicator reached $x=0.313\pm0.003$, $y=0.329\pm0.003$, $Lv\geq187$ cd/m^2

F、Press reset key and Turn the Power-button “off to on” to quit from factory mode。

2. Geometry

1).Set cross-hatch pattern and preset timing as timing table listed.
2).Change to each mode in turn and wait for the monitor finish auto-alignment and save press before change to next mode.
3).Until all of modes are adjusted, exit OSD menu and press POWER OFF to exit factory mode.

5.4 Factory Defaults

Item	Defaults	Item	Defaults
Contrast	70%	Input Priority	N/A
Brightness	100%	Resolution Notice	On
Color Temperature	6500K	Volume	N/A
Sharpness	100%	Balance	N/A
OSD H. Position	50%	Treble	N/A
OSD V. Position	50%	Bass	N/A
OSD Time Out	15	720x400 / 640x400	720x400
OSD Background	On	DCR	ON
DDC	DDC/CI		

5.5 Function Test

1 Product: 19” LCD Monitor

2 Test Equipment: Color Video Signal & Pattern (or PC with SXGA resolution and a sound card)

3 Test Condition: Before function test and alignment, each LCD Monitor should be warmed up for at least 30 minutes with the following conditions:
(a)In room temperature,
(b) With full-white screen, RGB, and Black
(c) With cycled display modes,
640*480 (H=43.27kHz, V=75Hz)
800*600 (H=53.7kHz, V=75Hz)
1024*768 (H=68.67kHz, V=75Hz)
1280*1024 (H=79.97kHz, V=75Hz)

4 Test Display Modes & Pattern

Compatible Modes

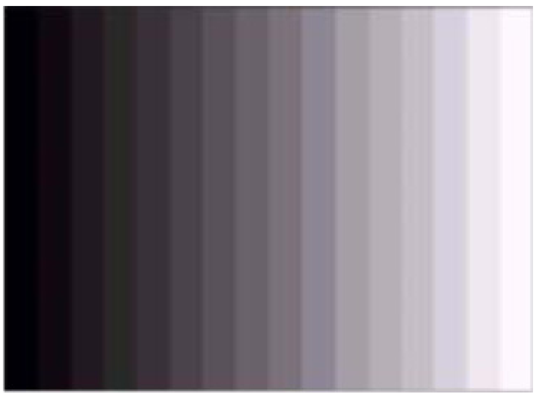
Item	Timing	Analog
1	640 x 480 @ 60Hz, 31.5kHz	**Yes**
2	640 x 480 @ 75Hz, 31.5kHz	**Yes**
3	720 x 400 @ 70Hz, 31.5kHz	**Yes**

4	800 x 600 @ 56Hz, 35.1kHz	**Yes**
5	800 x 600 @ 60Hz, 37.9kHz	**Yes**
6	800 x 600 @ 72Hz, 48.1kHz	**Yes**
7	800 x 600 @ 75Hz, 46.9kHz	**Yes**
8	1024 x 768 @ 60Hz, 48.4kHz	**Yes**
9	1024 x 768 @ 70Hz, 56.5kHz	**Yes**
10	1024 x 768 @ 72Hz, 58.1kHz	**Yes**
11	1024 x 768 @ 75Hz, 60.0kHz	**Yes**
12	1280 x 1024 @ 60Hz, 48.4kHz	**Yes**
13	1280 x 1024 @ 75Hz, 60.0kHz	**Yes**

Function Test Display Pattern

Item	Test Content	Pattern	Specification	Remark
1	Frequency & Tracking	Fine Line Moire	Eliminate visual wavy noise.	Figure 1
2	Contrast/Brightness	16 Gray Scale	16 gray levels sh should be distinguishable.	Figure 2
3	Boundary	Horizontal & Vertical Thickness	Horizontal and Vertical position of video should be adjustable to be within the screen frame.	Figure 3
4	RGB Color Performance	RGB Color Intensities	Contrast of each R, G, B, color should be normal.	Figure 4,5,6
5	Screen Uniformity & Flicker	Full White	Should be compliant with the spec.	Figure 7
6	Dead Pixel/Line	White Screen & Dark Screen	The numbers of dead pixels should be compliant with the spec.	Figure 7,8
7	White Balance	White & Black Pattern	The screen must have the pure white and black pattern, no other color.	Figure 9





Fine Line Morie Pattern (Figure1)

Gray Scale Pattern (Figure2)





Horizontal & Vertical Thickness Pattern (Figure 3)

R. Color Pattern (Figure 4)





G. Color Pattern (Figure 5)

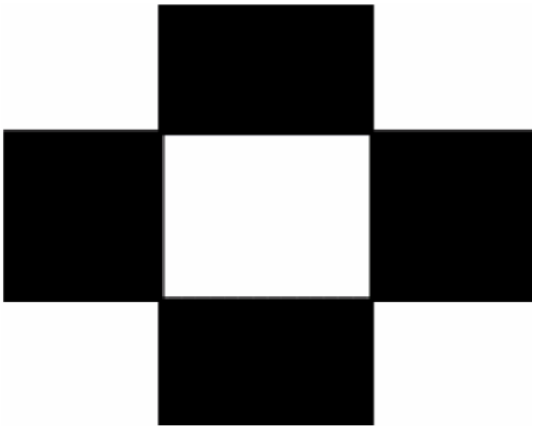
B. Color Pattern (Figure 6)





Full White Pattern (Figure 7)

Dark Screen Pattern (Figure 8)



Black-White Pattern (Figure 9)

4.3 Function Test and Alignment Procedure

All Modes Reset

You should do "All Mode Reset" (Refer to Chapter III-3. Hot Keys for Function Controls) first. This action will allow you to erase all end-user's settings and restore the factory defaults.

Auto Image Adjust

Please select and enter "Auto Image Adjust" function on Main Menu to see if it is workable. The "Auto Image Adjust" function is aimed to offer a better screen quality by built-in ASIC. For optimum screen quality, the user has to adjust each function manually.

Firmware

Test Pattern: Burn In Mode (Refer to Chapter III-3. Hot Keys for Function Controls)

- Make sure the F/W is the latest version.

DDC

Test Pattern: EDID program

Make sure it can pass test program.

Fine Tune and Sharpness

Test Signal: 1280*1024@60Hz

Test Pattern: Line Moire Pattern

Check and see if the image has noise and focus performs well. Eliminate visual line bar.

If not, readjust by the following steps:

(a)Select and enter "Fine Tune" function on "Manual Image Adjust" to adjust the image to eliminate visual wavy noise.

(b)Then, select and enter "Sharpness" function to adjust the clarity and focus of the screen image.

Boundary

Test Signal: 1280*1024@60Hz

Test Pattern: Horizontal & Vertical Line Thickness Pattern

Check and see if the image boundary is within the screen frame.

If not, readjust by the following steps:

(a)Select and enter "Manual Image Adjust" function on OSD Main Menu.
(b)Then, select and enter "Horizontal Size" or "Horizontal/Vertical Position" function to adjust the video boundary to be full scanned and within screen frame.

White Balance

Test Signal: 1280*1024@60Hz
Test Pattern: White and Black Pattern
1.5.8 R, G, B, Colors Contrast
Test Signal: 1280*1024@60Hz
Test Pattern: R, G, B, Color Intensities Pattern and 16 Gray Scale Pattern

- Check and see if each color is normal and distinguishable.
- If not, please return the unit to repair area.

Screen Uniformity and Flicker

Test Signal: 1280*1024@60Hz
Test Pattern: Full White Pattern

- Check and see if it is in normal condition.

1.5.10 Dead Pixel and Line
Test Signal: 1280*1024@60Hz
Test Pattern: Dark and White Screen Pattern

- Check and see if there are dead pixels on LCD panel with shadow gauge and filter film.
- The total numbers and distance of dead pixels should be compliant with the spec.

Mura

Test Pattern: White, RGB, Black, & Grey
Test Tool: 10% ND Filter

- Check if the Mura can pass 10% ND Filter.

Check for Secondary Display Modes

Test Signal:
Analog: 640*480@60/75Hz;
720*400@70Hz; 800*600@56/60/72/75Hz;
1024*768@60/70/72/75Hz; 1280*1024@60/75Hz

- Normally when the primary mode 1280*1024@60Hz is well adjusted and compliant with the specification, the secondary display modes will also be compliant with the spec. But we still have to check with the general test pattern to make sure every secondary is compliant with the specification.

All Modes Reset

After final QC step, we have to erase all saved changes again and restore the factory defaults. You should do "All Mode Reset" again.

Power Off Monitor

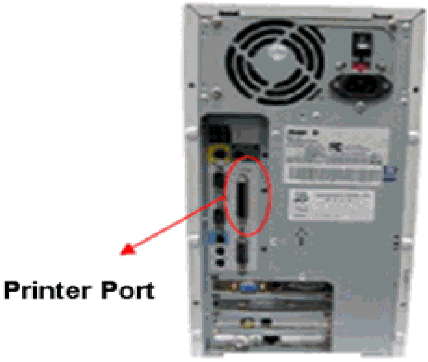
Turn off the monitor by pressing "Power" button.

5.6 Firmware Upgrade Procedure

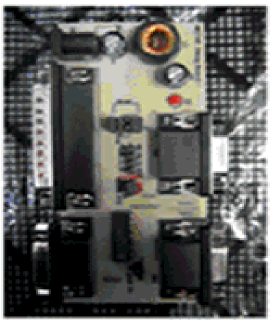
When you receive the returned monitor, please check whether the firmware version is the latest. If not, please do the following procedures to upgrade it to the latest version.

1 Equipment Needed

- Monitor(TSUM Series)
- Fixture for Firmware Upgrade
- Power Adapter (P/N: 47.58201.001) *1 for Fixture
- VGA Cable (P/N: 42.59901.003) *1(Pin 4, 11 should be connected to GND)
- PC (Personal Computer)
- LPT Cable (P/N: 42.59906.001) *1
- Firmware Upgrade Program
- One additional monitor for checking the program execution



PC



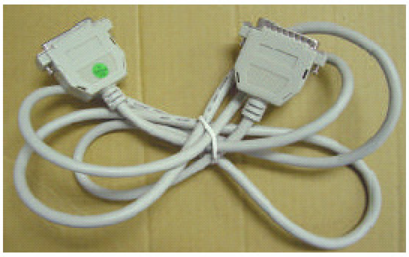
Fixture



VP950



Power Adapter for Fixture
(P/N: 47.58201.001)



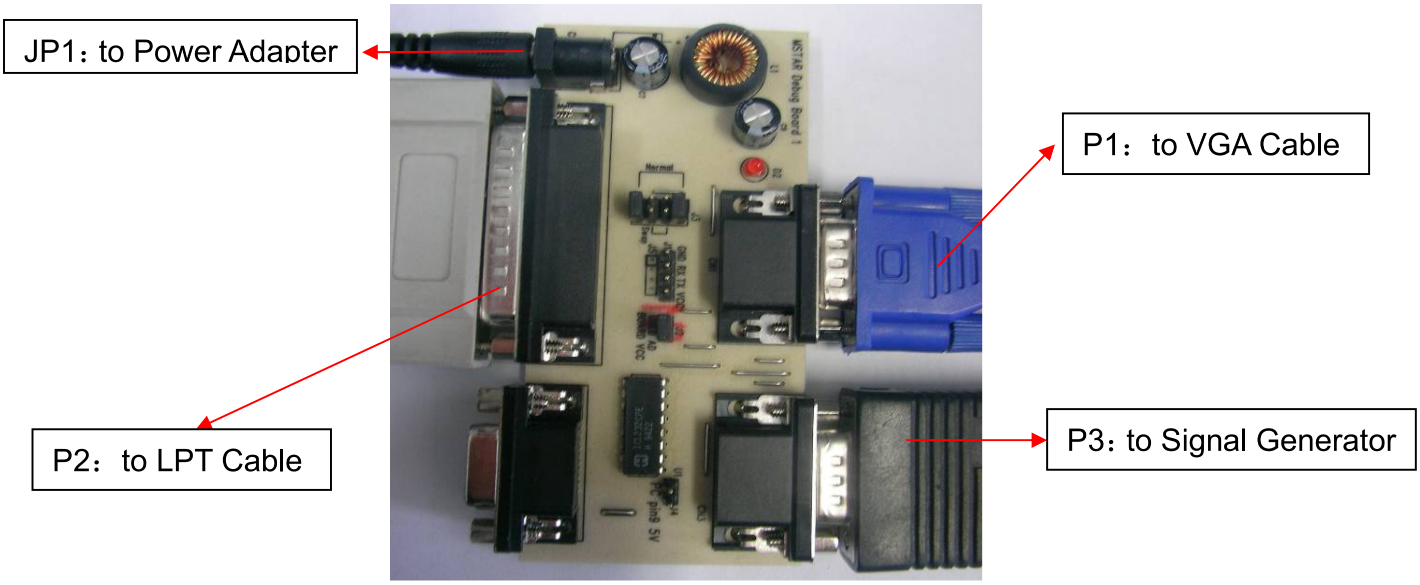
LPT Cable
(P/N: 42.59906.001)



VGA Cable
(P/N: 42.59901.003)

2 Setup Procedure

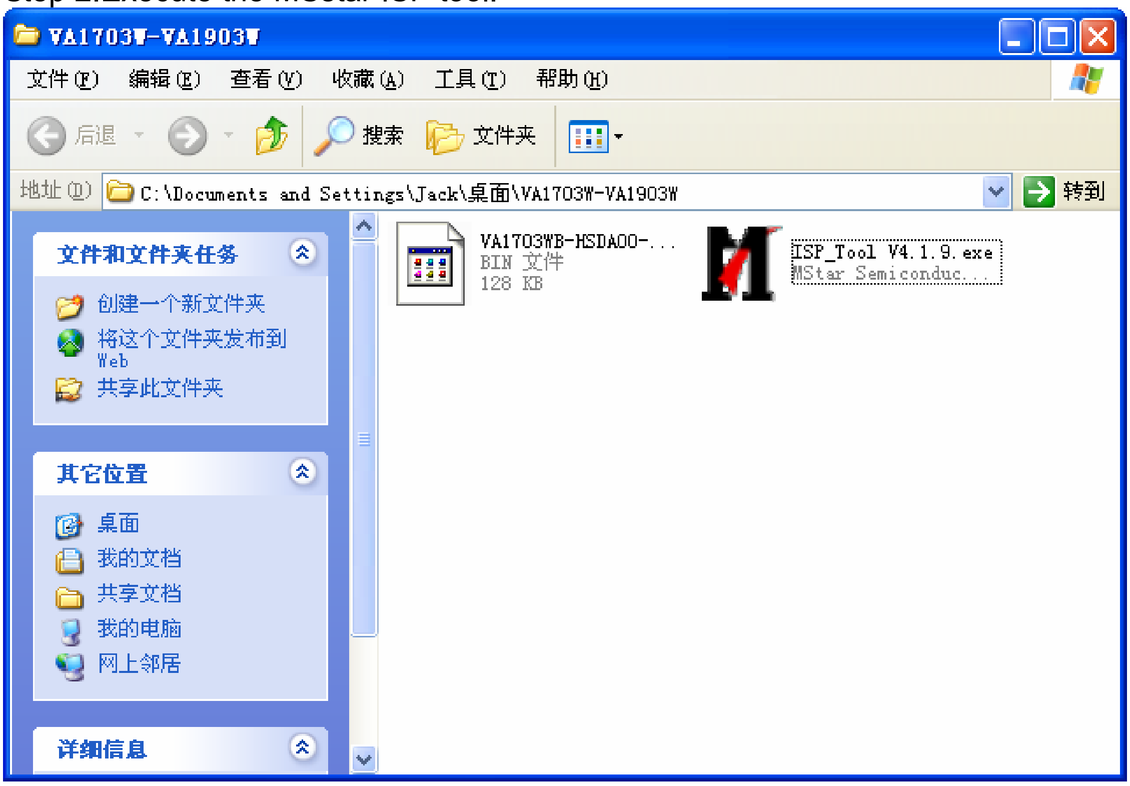
2.1 Connect P2 of Fixture with printer port of PC by LPT Cable.
2.2 Connect P1 of Fixture with Monitor(TSUM series) by VGA Cable.
2.3 Plug Power Adapter to Fixture.
2.4 Connect Power Cord to Monitor(TSUM series).
2.5 Connect P3 to the Signal Generator (eg.Chroma2326) for verifying it after the operation being completed.
2.6 Connect PC to the additional monitor.



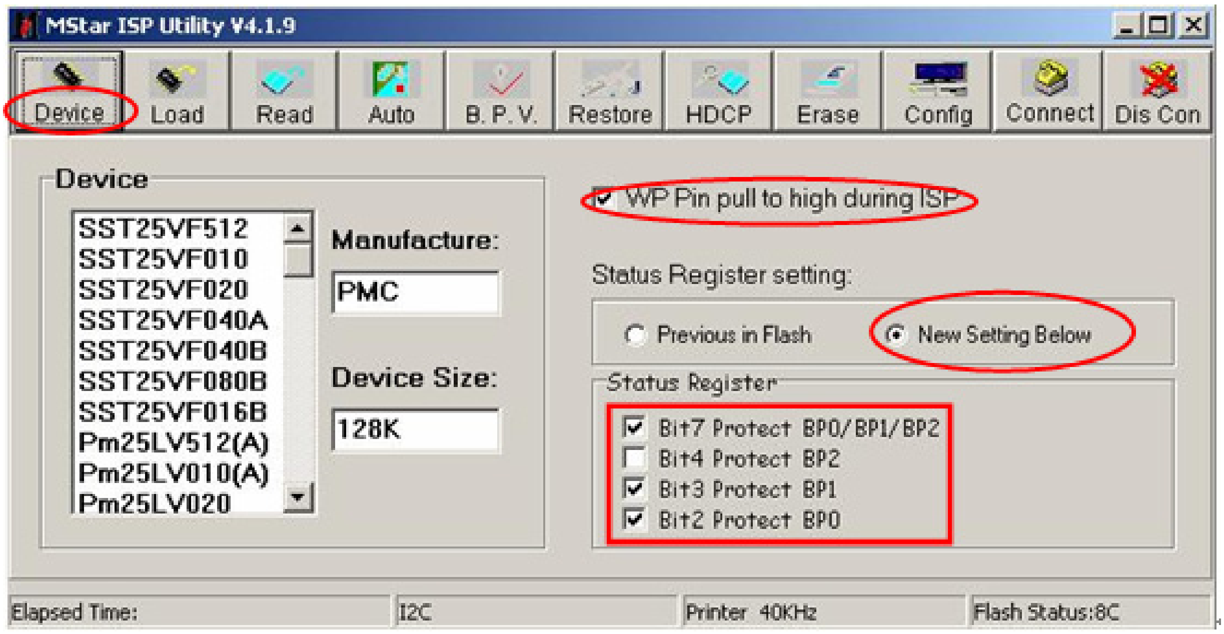
3 Firmware Upgrade Procedure

Step 1. Let Monitor(TSUM series) set to be connected with AC cable and VGA cable.

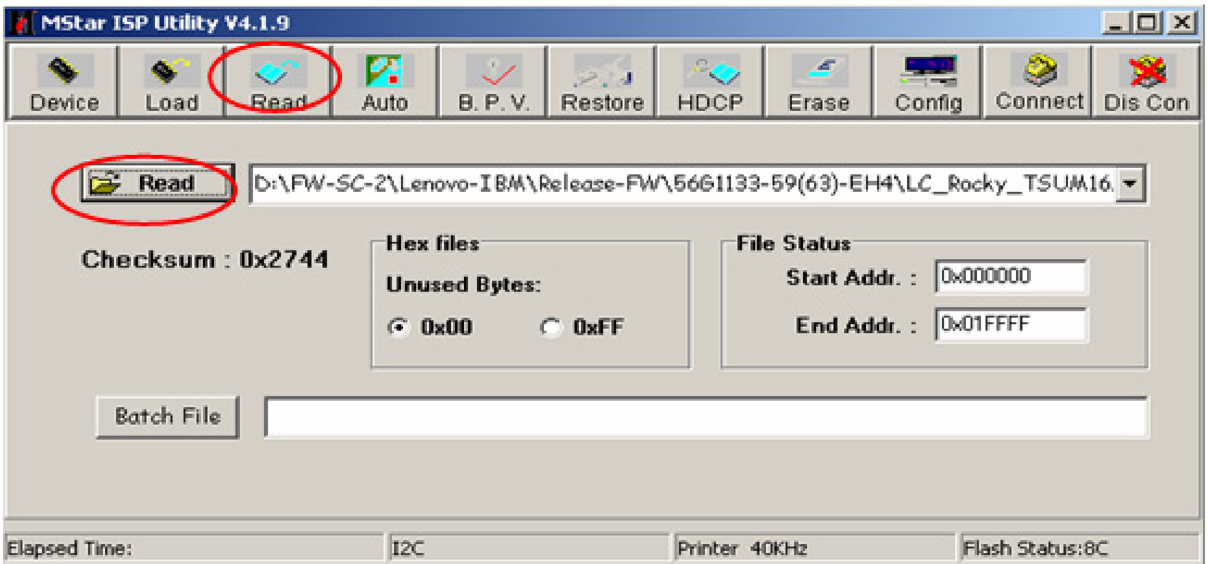
Step 2.Execute the MSstar ISP tool.



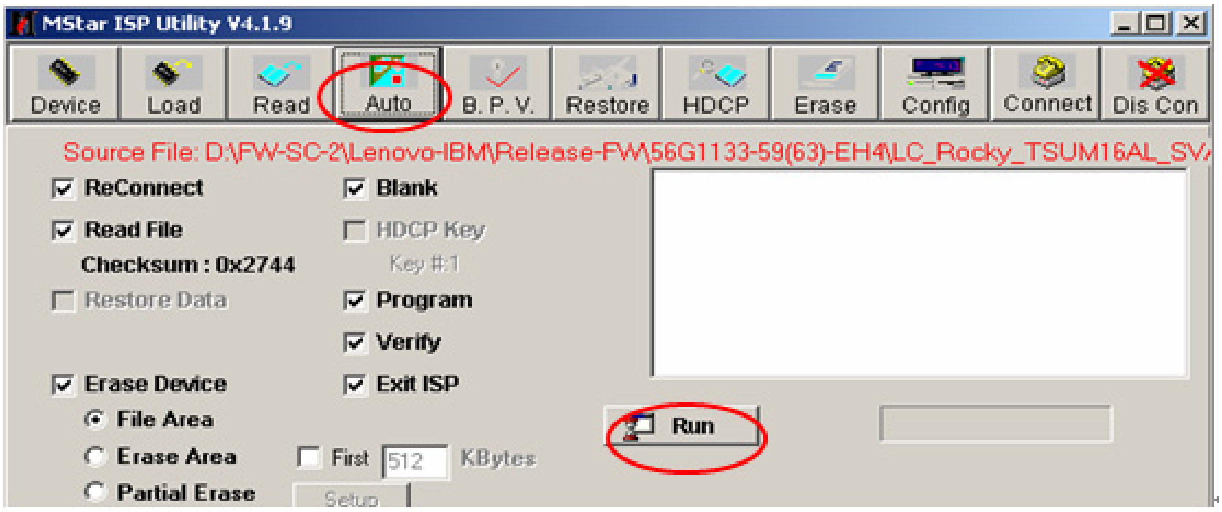
Step 3. Click “Device” button . Make sure that parameters relative to WP# is followed bellow.



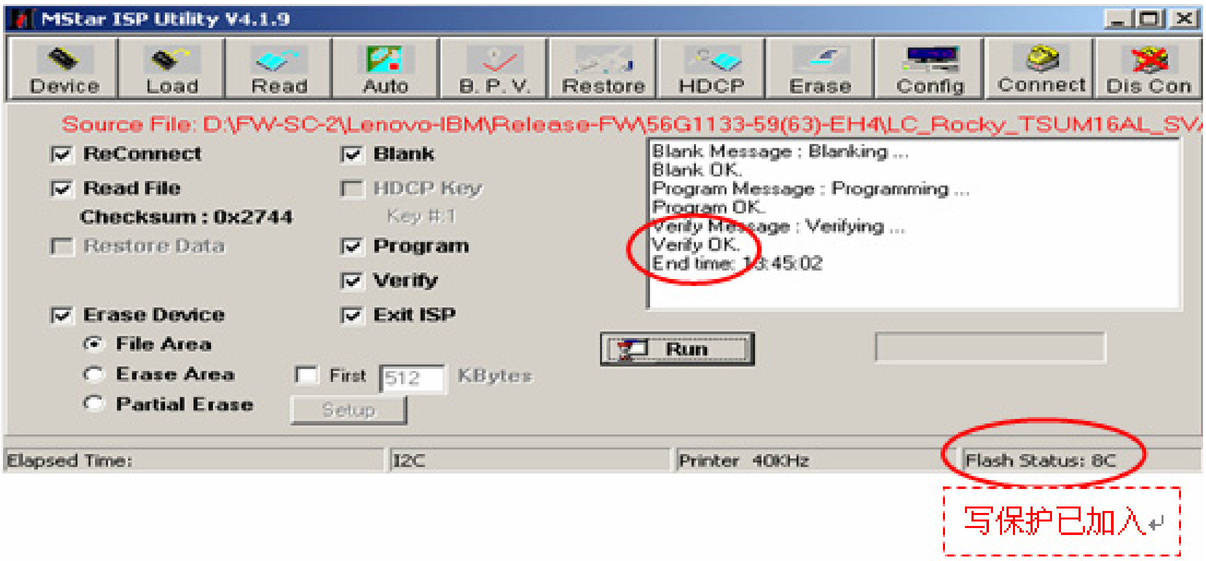
Step 4. Click "Read" button. Select the object bincode on your corresponding directory.



Step 5. Click "Auto" button. Be sure that function of Erase Device (File Area), Blank, Program and Verify is selected, then execute the flashing action by clicking the "Run" button.



Step 6. If the flashing F/W has been completed, "Verify Ok" message will be shown on the right TextBox and Flash Status will be "8C" in the right-bottom of window.



Step 7. Unplug and replug power cord of Monitor(TSUM series) set and then check the OSD operation and image on srceen.

Step 8. At last, do "Memory Recall."

5.7 DDC Upgrade Procedure

1 Setup Procedure

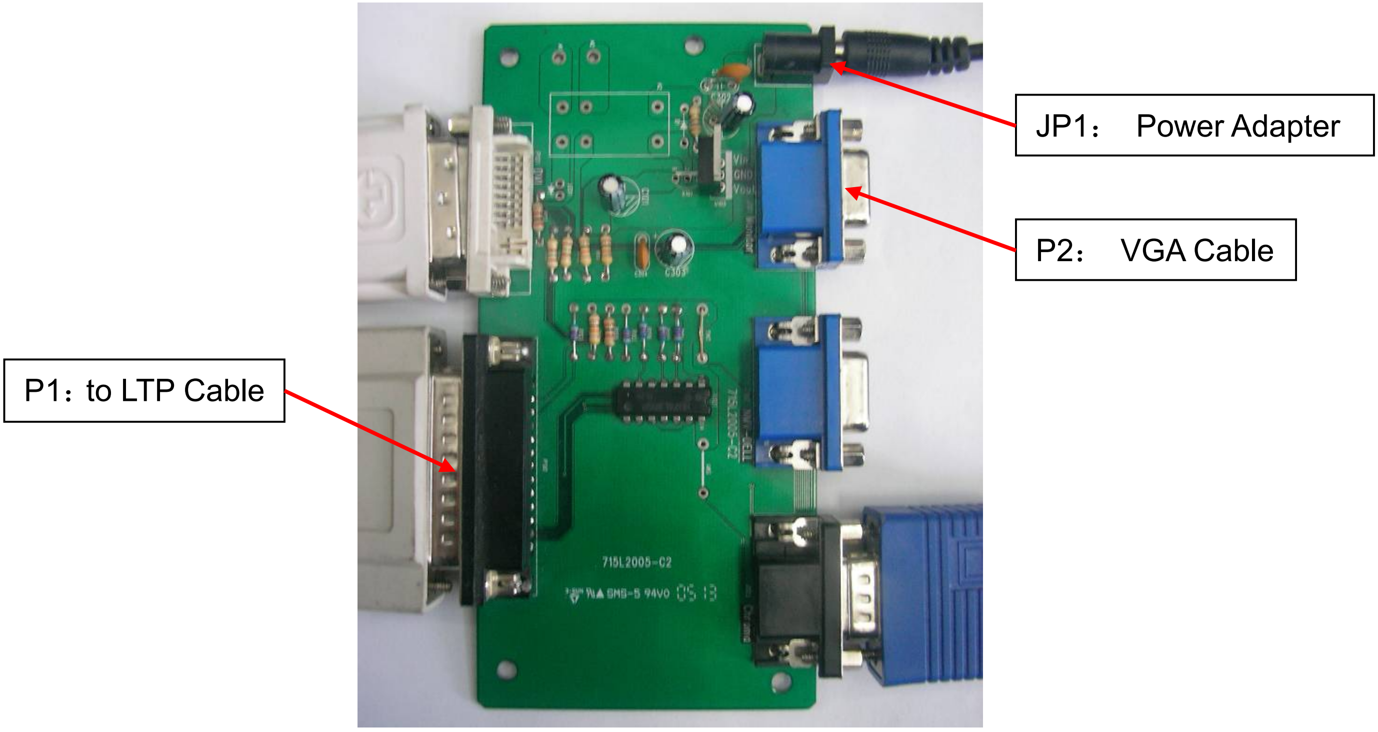
1.1 Connect P2 and monitor of Fixture with VGA ports of Monitor (TSUM Series) by VGA Cable.

1.2 Connect P1 of Fixture with Printer port of PC by LPT Cable.

1.3 Plug Power Adapter to Fixture.

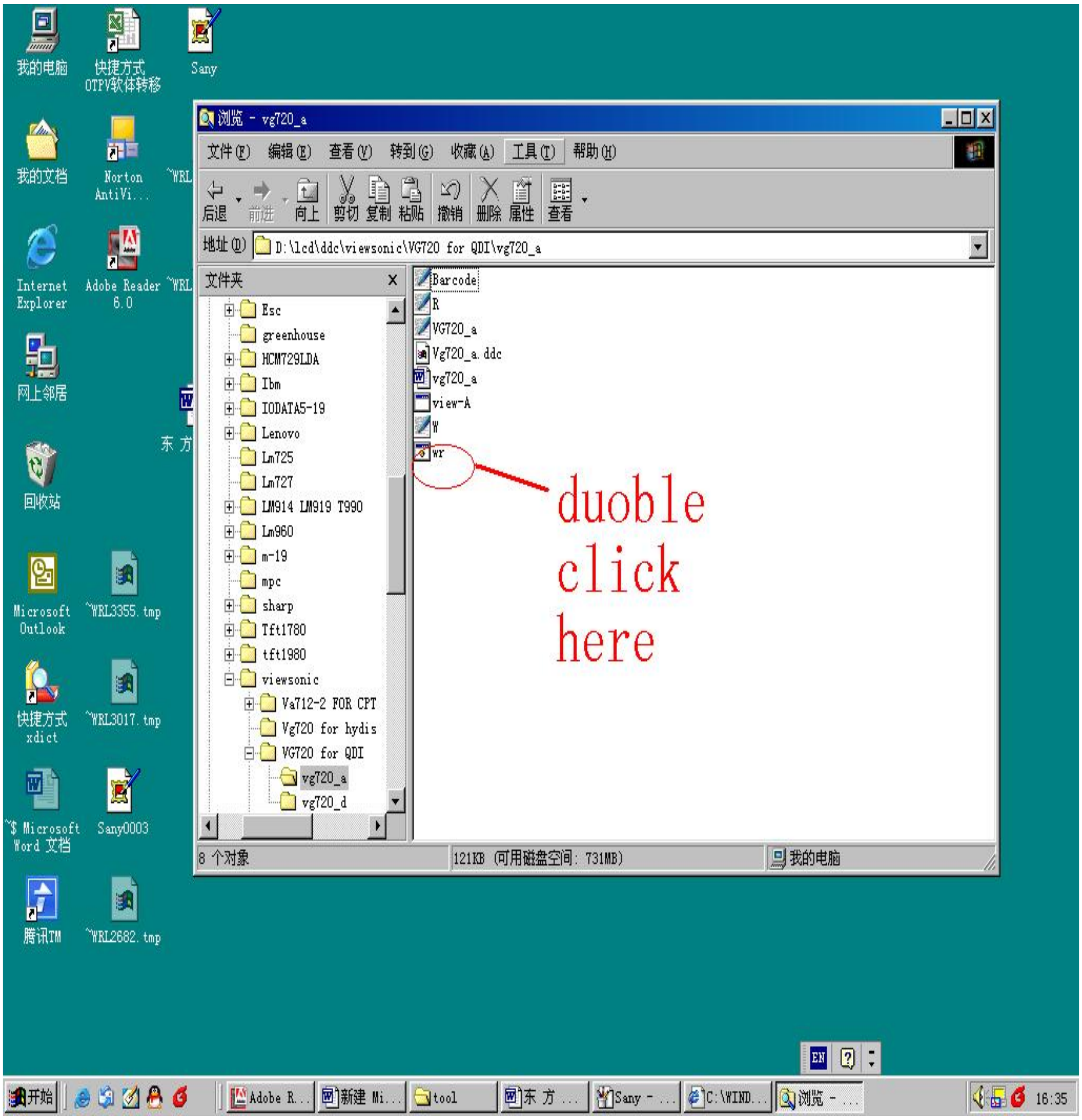
1.4 Connect Power Cord to Monitor (TSUM Series).

1.5 Connect PC to the additional monitor.

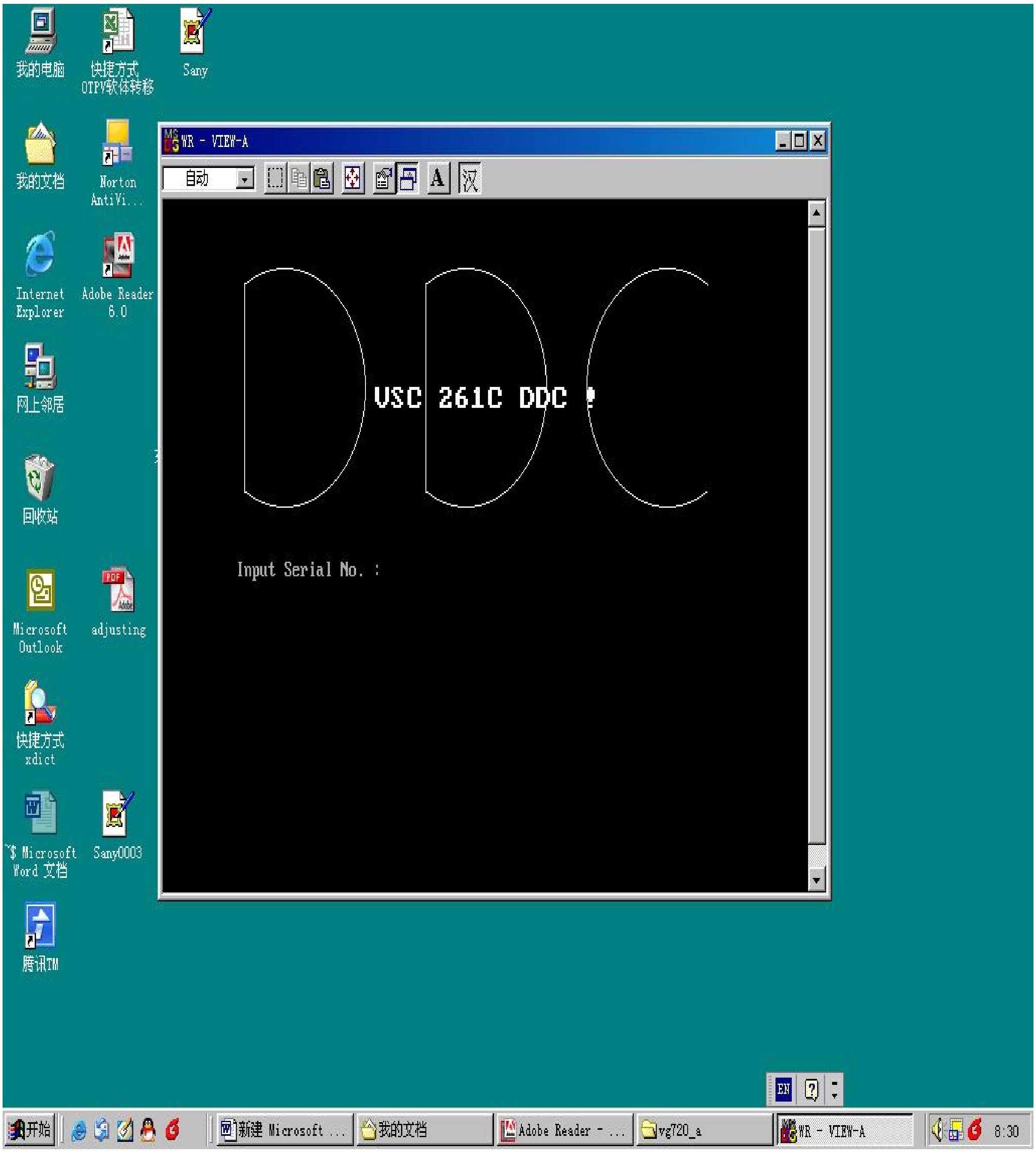


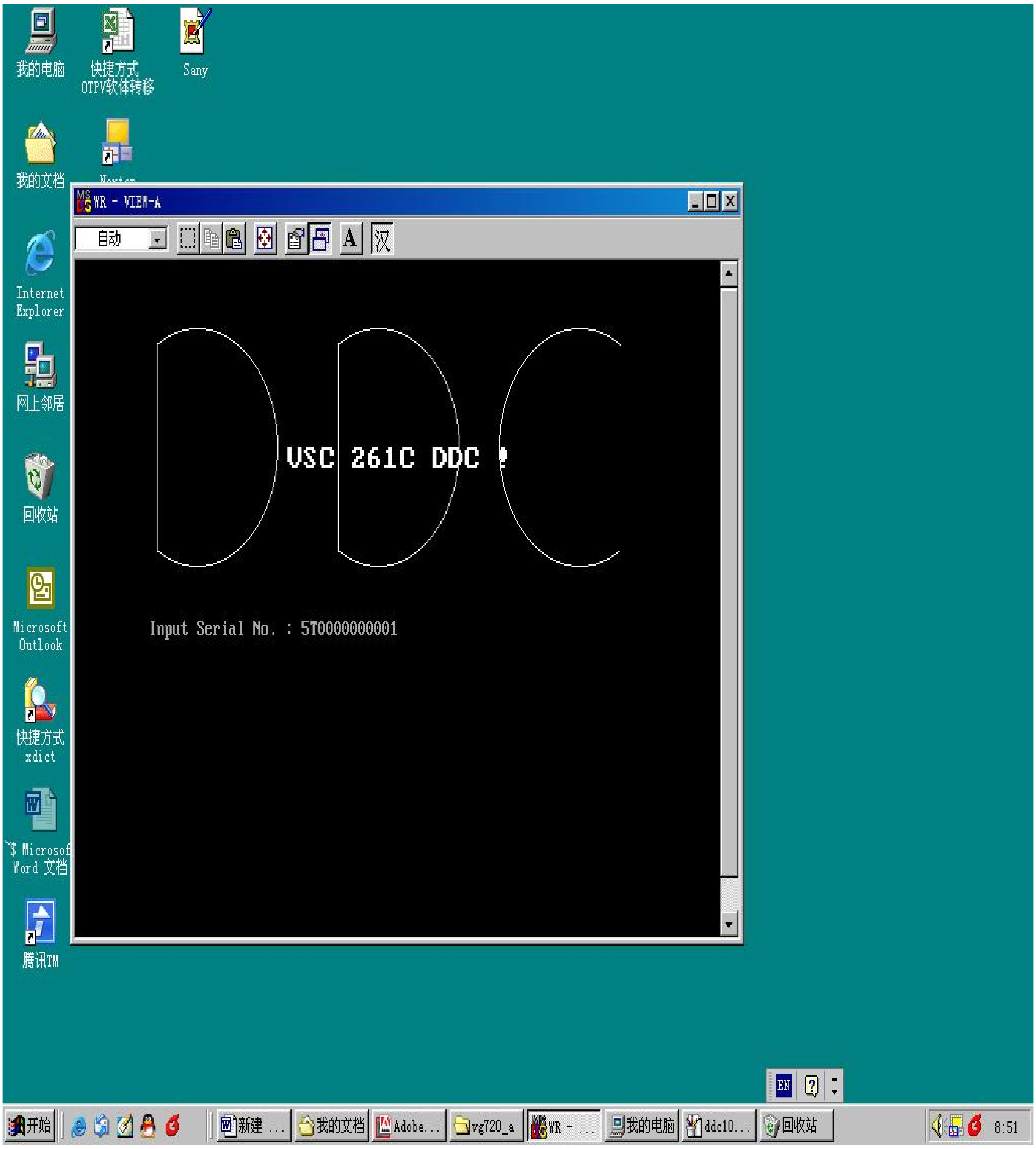
2 DDC Key In Procedure

Sep1.Select and execute DDC Key In program

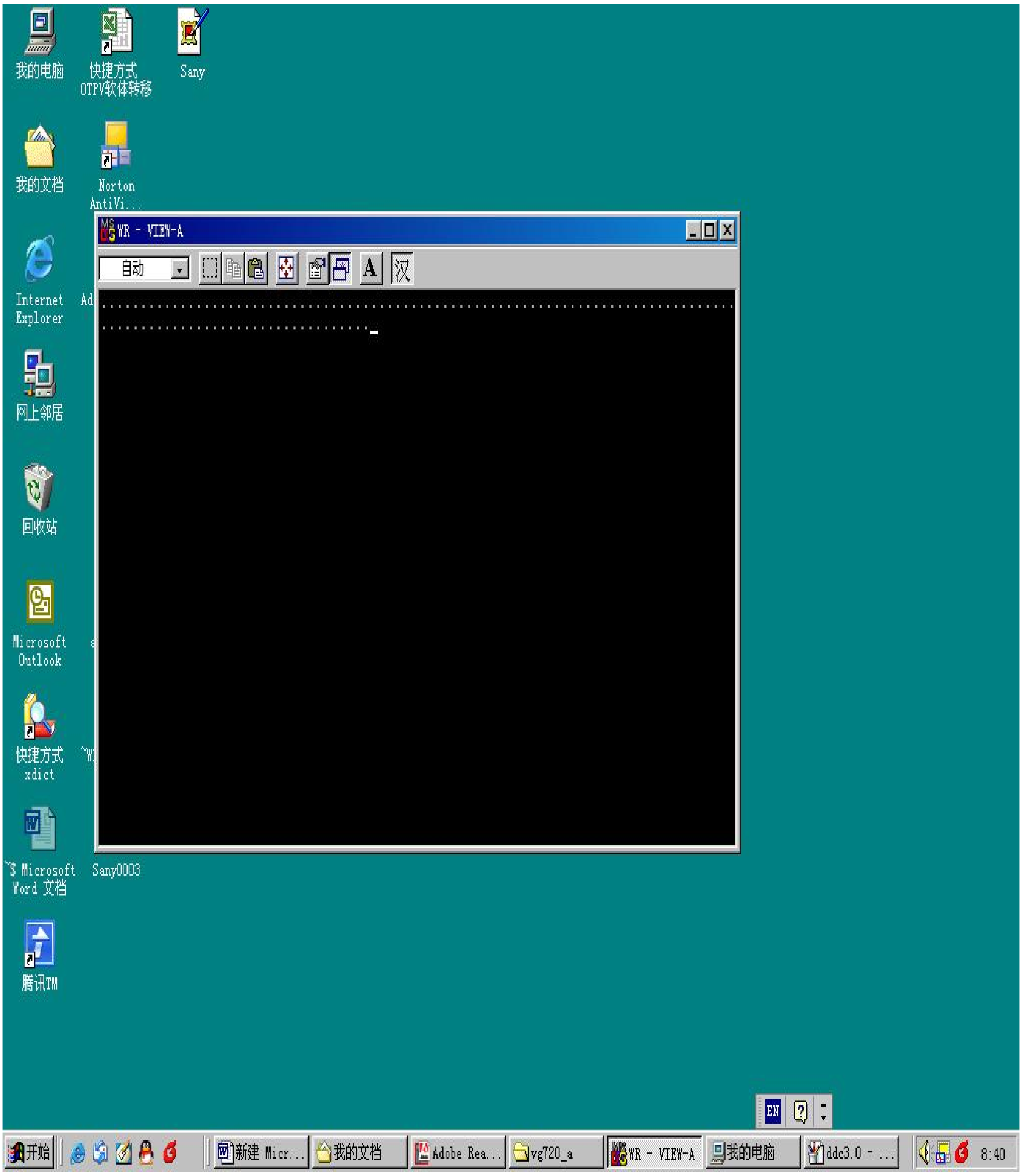

浏览 - vg720_a
文件(F) 编辑(E) 查看(V) 转到(G) 收藏(A) 工具(T) 帮助(H)
后退 前进 向上 剪切 复制 粘贴 撤销 删除 属性 查看
地址(D) D:\lcd\ddc\viewsonic\VG720 for QDI\vg720_a
文件夹
Esc
greenhouse
HCM729LDA
Ibm
IODATA5-19
Lenovo
Lm725
Lm727
LM914 LM919 T990
Lm960
m-19
mpc
sharp
Tft1780
tft1980
viewsonic
Va712-2 FOR CPT
Vg720 for hydis
VG720 for QDI
vg720_a
vg720_d
Barcode
R
VG720_a
Vg720_a.ddc
vg720_a
view-A
W
wr
duoble
click
here
8 个对象
121KB (可用磁盘空间: 731MB)
我的电脑
我的文档
Internet Explorer
网上邻居
回收站
Microsoft Outlook
Norton AntiVi...
Adobe Reader 6.0
Sany
Sany0003
~WRL3355.tmp
~WRL3017.tmp
~WRL2682.tmp
腾讯TM
开始
16:35

Sep2:Inpute the S/N and execute “Enter”

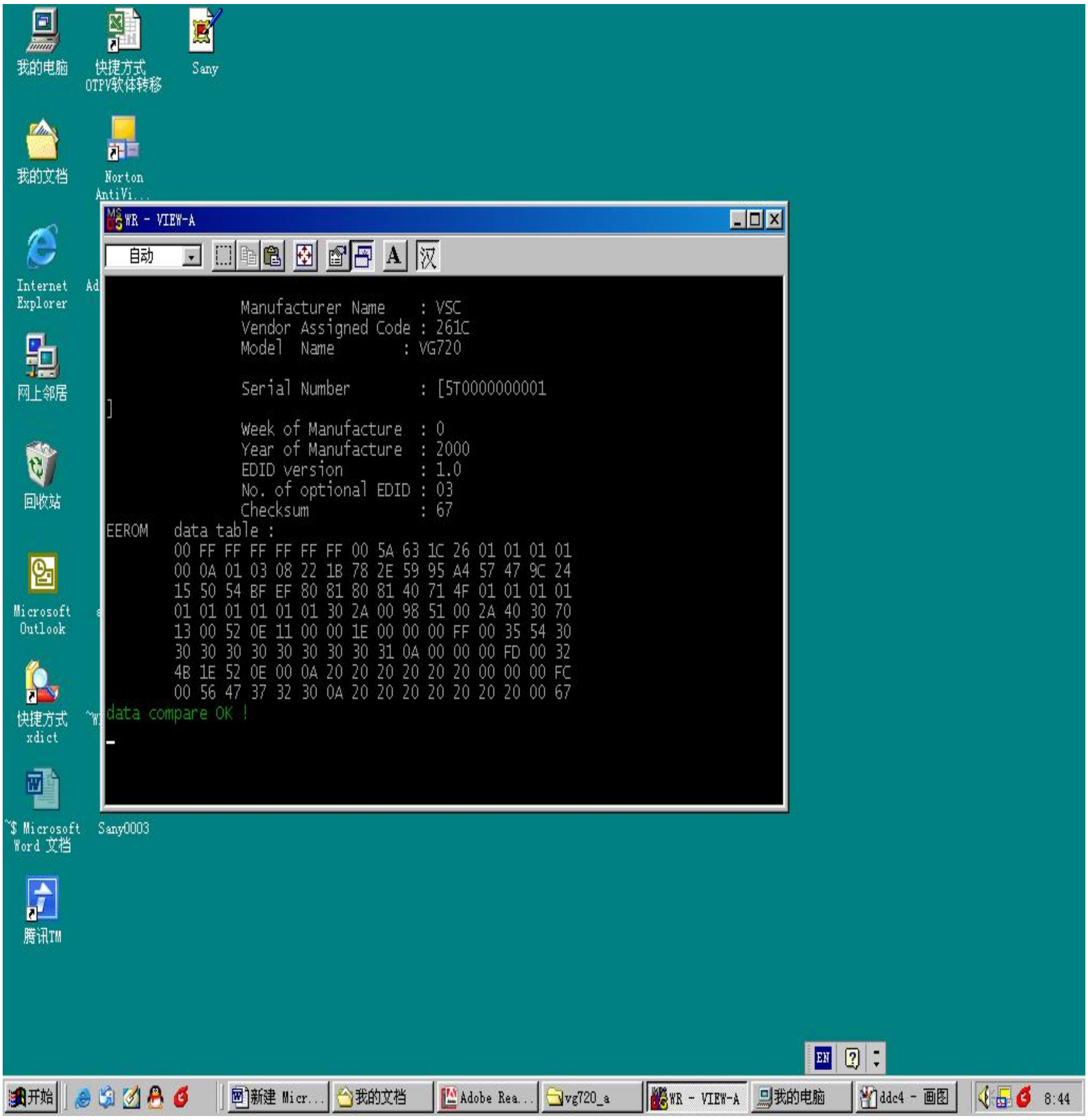



WR - VIEW-A
VSC 261C DDC !
Input Serial No. : 5T0000000001

Sep3:Key the "Enter" and write the data



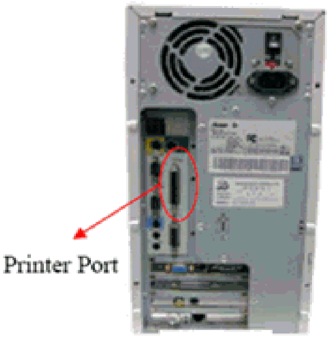
Sep4:If ddc program OK and show “data compare ok”



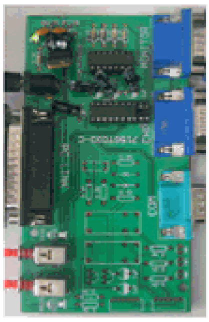
5.8 HDCP Upgrade Procedure

1 Equipment Needed

- Monitor(TSUM Series)
- Fixture for Firmware Upgrade
- Power Adapter (P/N: 47.58201.001) *1 for Fixture
- VGA Cable (P/N: 42.59901.003) *1(Pin 4, 11 should be connected to GND)
- PC (Personal Computer)
- LPT Cable (P/N: 42.59906.001) *1
- HDCP Upgrade code
- One additional monitor for checking the program execution

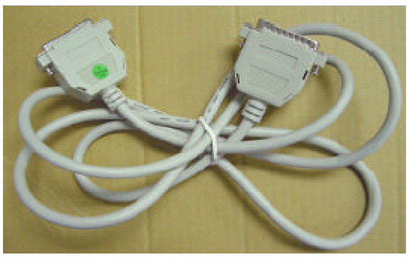


PC


Fixture


VP950

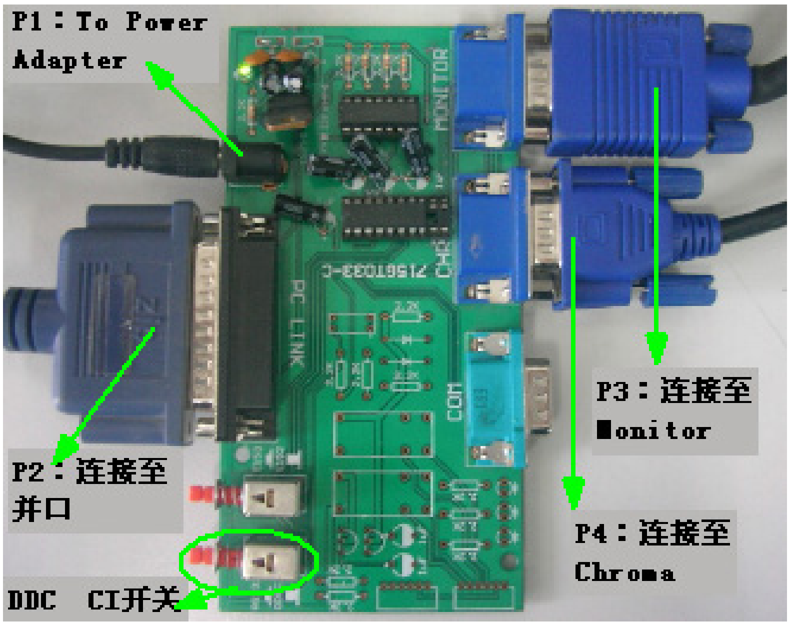

Power Adapter for Fixture
(P/N: 47.58201.001)


LPT Cable
(P/N: 42.59906.001)


VGA Cable
(P/N: 42.59901.003)

2 Setup Procedure

3.2.1 Connect PC to the additional monitor.
3.2.2 Connect Power Cord to Monitor(TSUM series).
3.2.3 Connect P3 of Fixture with Monitor(TSUM series) by VGA Cable.
3.2.4 Connect P4 to the Signal Generator (eg.Chroma2326) for verifying it after the operation being completed.
3.2.5 Connect P2 of Fixture with printer port of PC by LPT Cable.
3.2.6 Plug Power Adapter to Fixture.
3.2.7 Open DDC/CI



3 Firmware Upgrade Procedure

Step 1. Let Monitor(TSUM series) set to be connected with AC cable and VGA cable.

Step 2.Execute the MSstar HDCP tool.



Step 3. Click “加载 HDCP…” button , Select the object bincode on your corresponding directory.



Step 4. Click option int the lef, select the way to write to only one monitor or two monitors. (eg. Only one monitor)



Step 5. Click “开始” button, execute the write action.



Step 6. If HDCP code writer has been completed, “Monitor 1 PASS” message will be shown in the left-bottom of window.

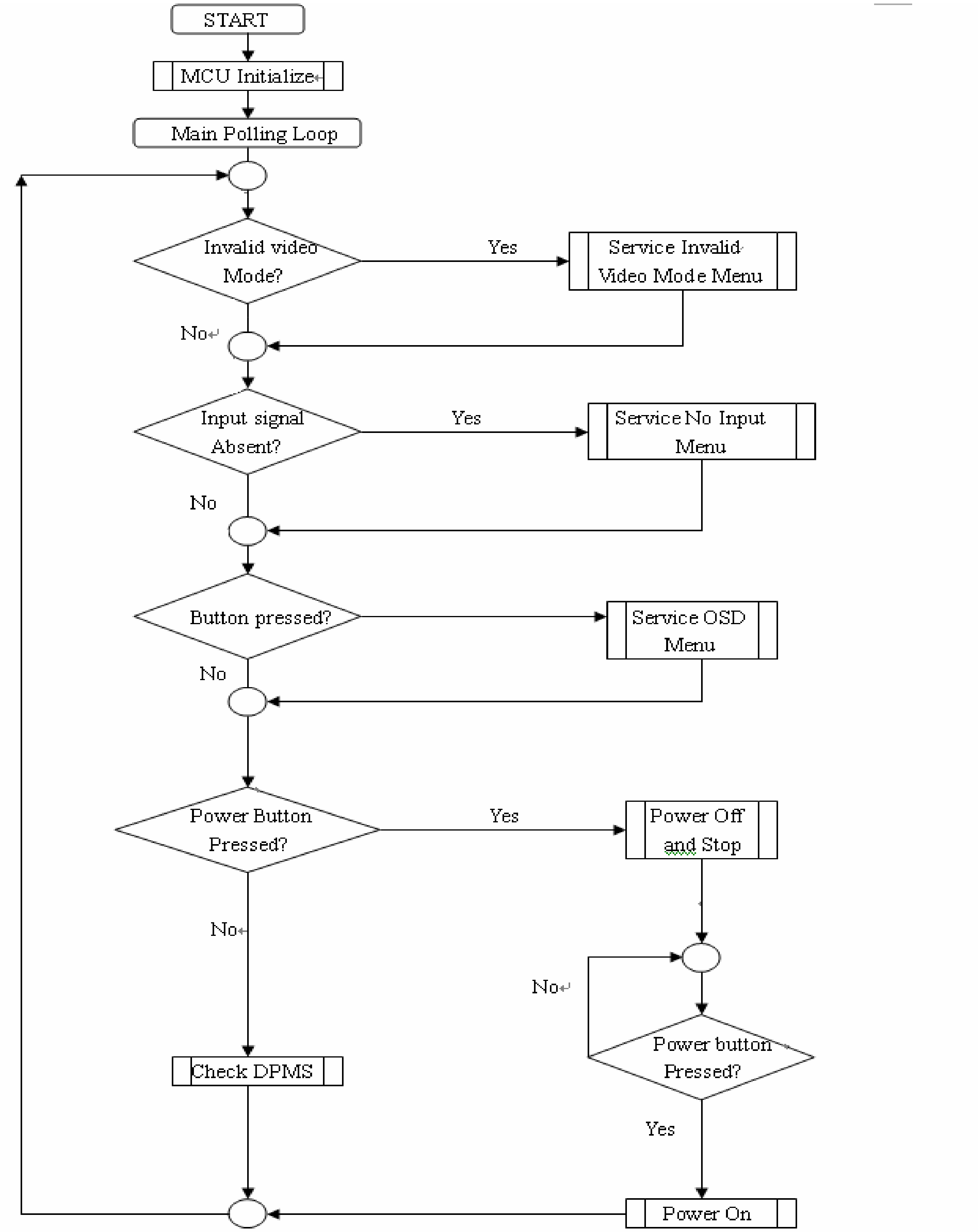


Step 7. If HDCP write failed, please check relative connection(or DDCCI) is right or not , then execute the HDCP code write action again.

5.9 Packing Procedure



6. Troubleshooting Flow Chart



7. Recommended Spare Part List

VP950 BOM list——T97HMJDKMWVSBNJ

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1		023G3178709 3A	LOGO			1
2		040G 45760819A	DATE/MODEL LABEL			1
3		040G 459709 1B	CARTON LABEL			1
4		040G 459709 4A	H/V WARNING LABEL			1
5		040G 459709 5A	HI-POT LABEL FOR 17-LCD			1
6		040G 581 26704	SHIPPING LABEL			1
7		040G 58162435A	P/N LABEL			1.05
8		044G9003210	CORNER PAPER			0.083
9		045G 77 3	PE PACKING			1.73
10		050G 600 1 W	WHITE STRAP			74
11		052G 1150 C	INSULATING TAPE			8
12		052G 1185 24	VSC TAPE			65
13		052G 1211527	ALUMINUM FOIL TAPE			2
14		052G 2191 D	PAPER TAPE			75
15		052G6019 1	INSULATING TAPE			15
16		052G6020 5	PROTECT FILM			1
17		070GHDCP500HDC	HDCP CODE			1
18		089G 175 8 L	FQE41177F USB CABLE 1800mm A+B	E08905		1
19		089G 728CAA902	SIGNAL CABLE 1.8M	E08902		1
20		089G 728GAA902	SIGNAL CABLE	E08902		1
21		089G1748GAA AC	SIGNAL CABLE DVI GREATLAND	E08903		1
22		089G176J 6500	FFC CABLE			1
23		089G179J30H583	FFC CABLE 30PIN 180MM	E08904		1
24		089G402A18N IS	POWER CORD/(TPV 共用)32-D022438	E08901		1
25		089G402A18N YH	POWER CABLE(32E1818019)(美规)	E08901		1
26		0M1G 330 4120	SCREW 42A9930008			1
27		0M1G 330 6120	SCREW 42A9930014			4
28		0M1G 940 12 47 CR3	SCREW			4
29		0M1G1140 8120	SCREW			1
30		0M1G1730 6120	SCREW			3
31		0M1G1730 6120	SCREW			4
32		750GLH90N3C12N000V	PANEL HSD190MEN3-C00 NJ HSD			1
33		CBPC7HMJVSQJ1	MAIN BOARD			1
34		J07G 1 S116	WOODEN PALLET			0.021

35		J12G8B02 1	RUBBER			1
36		J15G8B12 3	MAINFRAME L19-7VSC3			1
37		J15G8B14 1	USB BKT			1
38		J33G8B10EC2 2L	KEY BUTTON L19-7VSC3			1
39		J33G8B11 1 1C	LENS L19-VSC3			1
40		J33G8B12EC2 1L	HINGE COVER VP950			1
41		J34G8B16EC2C1B	BEZEL L19-7VSC3	M03401		1
42		J34G8B17EC2 3B	REARCOVER L19-7VSC3	M03402		1
43		J37G 006 1	HINGE ASS'Y FOR VP950			1
44		J37G 006 2	base			1
45		J40G 19T7093TB	ID LABEL VP950			1
46		J40G 58170919A	DCR STICKER			2
47		J40G 58170920A	RUBBER LABEL			1
48		J40G581B709 6A	S/N LABEL VA1716			2
49		J40GSTAR709 1A	EPA LABEL			1
50		J41G780170923B	service insert card			1
51		J41G780170926A	INSTALL STAND CARD			1
52		J41G780170927A	RUBBER INSERT CARD			1
53		J41G780270911A	VISTA CARD			1
54		J41G780270912A	QSG			1
55		J44G6002 S120	PAPER BOARD			0.042
56		J44G6002 S121	PAPER BOARD			0.021
57		J44G9017709 1A	CARTON			1
58		J44G9020 1	EPS L19-7VSC3 (VP950)			1
59		J44G9020 2	PS L19-7VSC3 (VP950)			1
60		J45G 76 28V3A	PE BAG FOR MANUAL-CARD			1
61		J45G 88606 6	PE BAG FOR BASE			1
62		J45G 88626 1 R	PE BAG FOR MONITOR			1
63		J50G 600 5	HANDLE 1			1
64		J50G 600 6	HANDLE 2			1
65		J52G8B01 1	MYLAR FOR VP950			1
66		J70G1903709 3A	CD MANUAL			1
67		KEPC7QV3	KEY BOARD			1
68		PWPC942HV4P	PWPC BOARD			1
69		USB7QV1	USB G2829-B-X-X-1-070928			1
70		033G3802 9	WAFER 9P RIGHT ANELE PITCH	CN705		1
71		033G8019 6C	CONN.6P 1.0 DIP	CN404		1
72		033G801930F BH U	CONNECTOR 30PIN	CN401		1
73		056G 665 13	ROLL BALL SW RBS310800	OC401		1
74		061G152M519 64	5.1OHM 2W	R775		1

75		067G215V100 7R	LOW E.S.R 10UF +/-20% 50V	C433		1
76		067G215V100 7R	LOW E.S.R 10UF +/-20% 50V	C446		1
77		067G215V100 7R	LOW E.S.R 10UF +/-20% 50V	C440		1
78		067G215V101 4N	KY25VB100M-CC3(6.3*11)	C760		1
79		067G215V101 4N	KY25VB100M-CC3(6.3*11)	C757		1
80		067G215V101 4N	KY25VB100M-CC3(6.3*11)	C402		1
81		067G215V101 4N	KY25VB100M-CC3(6.3*11)	C754		1
82		067G215V101 4N	KY25VB100M-CC3(6.3*11)	C756		1
83		088G 35315F H	D-SUB 15PIN	CN402		1
84		088G 35424F H	DVI CONNECTOR 24PIN	CN403		1
85		093G 2253B J1	XTL NXS14.31818AE32F-KAB5 20PPM 49/U-S	X401		1
86		701G 150 C S	ABS 94HB			12.18
87		009G6005 1	GROUND TERMINAL	GND1		1
88		009G6005 1	GROUND TERMINAL	GND2		1
89		033G8021 2E F	WAFER	CN801		1
90		033G8021 2E F	WAFER	CN802		1
91		033G8021 2E F	WAFER	CN803		1
92		033G8021 2E F	WAFER	CN804		1
93		040G 45762412B	CBPC LABEL			1.05
94		056G 139 3A	IC PC123Y22FZOF	IC902		1
95		061G 208151 64	RST MOFR 150 OHM +-5% 1W	R907		1
96		061G152M104 64	100KOHM 5% 2W	R909		1
97		061G152M43852T	RST MOF 0R43 5% 2W	R916		1
98		063G107K474 US	0.47UF +-10%	C909		1
99		065G 6J1006ET	10PF 5% SL 6KV	C801		1
100		065G 6J1006ET	10PF 5% SL 6KV	C812		1
101		065G305M1022EM	Y2 1000PF +-20% 250VAC	C901		1
102		065G305M1022EM	Y2 1000PF +-20% 250VAC	C902		1
103		065G306M1022BP	1000PF Y1.CAP	C903		1
104		065G306M2222BP	2200PF +-20% 400VAC	C900		1
105		067G215D4714KV	E.C 105℃ CAP 470UF M 25V ED SERIES	C925		1
106		067G215D4714KV	E.C 105℃ CAP 470UF M 25V ED SERIES	C811		1
107		067G215D4714KV	E.C 105℃ CAP 470UF M 25V ED SERIES	C805		1
108		067G215D6814KV	CAP 105℃ 680uF M 25V	C922		1
109		067G215D6814KV	CAP 105℃ 680uF M 25V	C923		1
110		067G215S10115R	ELECTROLYTICAL CAPACITOR	C907		1

111		067G215S1023KV	105℃ 1000UF M 16V	C926		1
112		067G215S4713KV	EC 105℃ CAP 470UF M 16V	C927		1
113		073G 174 65 H	LINE FILTER	L902		1
114		073G 174 76 L	CHOKE COIL LI TAI LF-002923	L901		1
115		073G 253 91 H	CHOKE COIL	L921		1
116		073G 253 91 H	CHOKE COIL	L922		1
117		080GL17T 33 N2	XFMR POWER 550uH YUVA	T901		1
118		080GL17T 40 DN	X'FMR TK.2001U.101	PT801		1
119		080GL17T 40 DN	X'FMR TK.2001U.101	PT802		1
120		087G 501 32 S	AC SOCKET	CN901		1
121		093G 50460 28	BRIDGE DIODE KBP208G LITEON	BD901		1
122		093G3006 1 1	31DQ06FC3 NIHON INTER	D922		1
123		095G 82510X509	WIREHARNESS 10P(SCN)-9P(PH)+2P(PH)140MM	CN902		1
124		705GQ761016	NR901 ASS'Y			1
125		705GQ9KP 57001	Q900 ASS"Y			1
126		705GQ9KP 93001	D920 ASS"Y			1
127		Q51G 6 4508	GLUE_RTV			2
128		Q85G0053 1 S	shield	HS4		1
129		S73G17476V	LINE FILTER ASS'Y	L901		1
130		033G3802 2B Y	CONNECTOR	CN704		1
131		067G 3151014KV	EC 105℃ CAP 100UF M 25V	C746		1
132		067G215V101 4R	LOW E.S.R 100UF +/-20% 25V	C729		1
133		067G215V101 4R	LOW E.S.R 100UF +/-20% 25V	C742		1
134		067G215V470 4N	KY25VB47-M-CC3.0 5*11MM	C749		1
135		067G305V101 3	105 摄氏度 100UF M 16V	C727		1
136		067G305V101 3	105 摄氏度 100UF M 16V	C725		1
137		067G305V101 3	105 摄氏度 100UF M 16V	C716		1
138		067G305V101 3	105 摄氏度 100UF M 16V	C702		1
139		073G 253127 L	IND CHOKE 150uH +-15% LITAI	L706		1
140		088G 350 1 TN	USB CONN	CN702		1
141		088G 350 1 TN	USB CONN	CN703		1
142		088G 351 2B TN	USB CONN	CN701		1
143		093G 2245B HE	XTL XAT024000FI1H-30X AT-49 24.000MHZ	X701		1
144		056G 562552	IC TSUM05PCWHL-LF MSTAR	U401		1
145		056G 563 31	IC AZ1117D-1.8-E1	U708		1
146		056G 585 4A	AP1117E33LA	U707		1
147		056G1133 34	M24C02-WMN6TP	U404		1
148		056G1133 34	M24C02-WMN6TP	U405		1

149		056G1133 81	SST25LF020A-33-4C-SAE	U402		1
150		057G 417 12 T	KEC 2N3904S-RTK/PS	Q404		1
151		057G 417 12 T	KEC 2N3904S-RTK/PS	Q405		1
152		057G 417 12 T	KEC 2N3904S-RTK/PS	Q702		1
153		057G 417 13 T	KEC 2N3906S-RTK/PS	Q407		1
154		057G 417 13 T	KEC 2N3906S-RTK/PS	Q406		1
155		057G 763 1	A03401 SOT23 BY AOS(A1)	Q401		1
156		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R436		1
157		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R437		1
158		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R417		1
159		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R420		1
160		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R422		1
161		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R450		1
162		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R451		1
163		061G0402100	RST CHIPR 10 OHM +-5% 1/16W	R434		1
164		061G0402100	RST CHIPR 10 OHM +-5% 1/16W	R433		1
165		061G0402100	RST CHIPR 10 OHM +-5% 1/16W	R432		1
166		061G0402100	RST CHIPR 10 OHM +-5% 1/16W	R431		1
167		061G0402100	RST CHIPR 10 OHM +-5% 1/16W	R430		1
168		061G0402100	RST CHIPR 10 OHM +-5% 1/16W	R429		1
169		061G0402100	RST CHIPR 10 OHM +-5% 1/16W	R428		1
170		061G0402100	RST CHIPR 10 OHM +-5% 1/16W	R427		1
171		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R461		1
172		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R460		1
173		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R455		1
174		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R454		1
175		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R425		1
176		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R424		1
177		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R423		1
178		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R421		1
179		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R418		1
180		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R408		1
181		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R407		1
182		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R483		1
183		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R462		1
184		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R467		1
185		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R468		1
186		061G0402101	RST CHIPR 100 OHM +-5% 1/16W	R469		1
187		061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	R771		1
188		061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	R435		1

189		061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	R413		1
190		061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	R412		1
191		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R774		1
192		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R772		1
193		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R770		1
194		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R475		1
195		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R473		1
196		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R472		1
197		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R470		1
198		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R438		1
199		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R426		1
200		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R404		1
201		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R401		1
202		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R443		1
203		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R446		1
204		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R448		1
205		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R452		1
206		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R453		1
207		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R457		1
208		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R459		1
209		061G0402104	RST CHIPR 100 KOHM +-5% 1/16W	R449		1
210		061G0402104	RST CHIPR 100 KOHM +-5% 1/16W	R482		1
211		061G0402222	RST CHIPR 2.2 KOHM +-5% 1/16W	R411		1
212		061G0402222	RST CHIPR 2.2 KOHM +-5% 1/16W	R410		1
213		061G0402223	RST CHIPR 22 KOHM +-5% 1/16W	R456		1
214		061G0402390 0F	RST CHIP 390R 1/16W 1%	R447		1
215		061G0402390 1F	RST CHIPR 3.9KOHM +-1% 1/16W	R477		1
216		061G0402390 1F	RST CHIPR 3.9KOHM +-1% 1/16W	R478		1
217		061G0402471	RST CHIPR 470 OHM +-5% 1/16W	R419		1
218		061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	R463		1
219		061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	R773		1
220		061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	R464		1
221		061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	R441		1
222		061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	R442		1
223		061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	R444		1
224		061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	R445		1
225		061G0402473	RST CHIPR 47 KOHM +-5% 1/16W	R405		1
226		061G0402560	RST CHIP 56R 1/16W 5%	R474		1
227		061G0402682	RST CHIP 6K8 1/16W 5%	R458		1
228		061G0402682	RST CHIP 6K8 1/16W 5%	R471		1

229		061G0402750	RST CHIPR 75 OHM +-5% 1/16W	R414		1
230		061G0402750	RST CHIPR 75 OHM +-5% 1/16W	R415		1
231		061G0402750	RST CHIPR 75 OHM +-5% 1/16W	R416		1
232		061G0402750	RST CHIPR 75 OHM +-5% 1/16W	R476		1
233		061G0603000	RST CHIPR 0 OHM +-5% 1/10W	R409		1
234		061G0603000	RST CHIPR 0 OHM +-5% 1/10W	FB402		1
235		061G0603000	RST CHIPR 0 OHM +-5% 1/10W	FB403		1
236		061G0603000	RST CHIPR 0 OHM +-5% 1/10W	FB404		1
237		061G0805000	0 OHM 1/10W	FB409		1
238		061G0805331	RST CHIPR 330 OHM +-5% 1/8W	R406		1
239		065G040210312K E	CAP CHIP 0402 0.01uF 16V X7R	C415		1
240		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C431		1
241		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C428		1
242		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C427		1
243		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C426		1
244		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C425		1
245		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C424		1
246		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C423		1
247		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C422		1
248		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C421		1
249		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C420		1
250		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C409		1
251		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C408		1
252		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C453		1
253		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C454		1
254		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C455		1
255		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C456		1
256		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C457		1
257		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C458		1
258		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C459		1
259		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C460		1
260		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C751		1
261		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C753		1
262		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C755		1
263		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C758		1
264		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C759		1
265		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C452		1
266		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C436		1
267		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C437		1
268		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C438		1

269		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C439		1
270		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C441		1
271		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C442		1
272		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C443		1
273		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C444		1
274		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C447		1
275		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C448		1
276		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C449		1
277		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C450		1
278		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C451		1
279		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C401		1
280		065G0402220 31	CHIP 22PF 50V NPO	C435		1
281		065G0402220 31	CHIP 22PF 50V NPO	C434		1
282		065G0402220 31	CHIP 22PF 50V NPO	C407		1
283		065G0402220 31	CHIP 22PF 50V NPO	C406		1
284		065G0402224 17	CAP CER 0.22UF -20%-80%	C432		1
285		065G0402224 17	CAP CER 0.22UF -20%-80%	C430		1
286		065G0402224 17	CAP CER 0.22UF -20%-80%	C429		1
287		065G0402224 17	CAP CER 0.22UF -20%-80%	C403		1
288		065G0402473 12	CHIP 0.047uF 16V X7R	C419		1
289		065G0402473 12	CHIP 0.047uF 16V X7R	C418		1
290		065G0402473 12	CHIP 0.047uF 16V X7R	C417		1
291		065G0402473 12	CHIP 0.047uF 16V X7R	C416		1
292		065G0402473 12	CHIP 0.047uF 16V X7R	C414		1
293		065G0402473 12	CHIP 0.047uF 16V X7R	C413		1
294		071G 56K121 M	CHIP BEAD	FB401		1
295		071G 56V301 M	CHIP BEAD 2012 300 OHM	FB408		1
296		071G 56V301 M	CHIP BEAD 2012 300 OHM	FB407		1
297		071G 56V301 M	CHIP BEAD 2012 300 OHM	FB406		1
298		071G 56V301 M	CHIP BEAD 2012 300 OHM	FB405		1
299		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D421		1
300		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D420		1
301		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D419		1
302		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D418		1
303		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D417		1
304		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D416		1
305		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D415		1
306		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D414		1
307		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D413		1
308		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D411		1

309		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D412		1
310		093G 64 42 P	BAV70 SOT23 BY PAN JIT	D423		1
311		093G 64 42 P	BAV70 SOT23 BY PAN JIT	D422		1
312		093G 39GA01 T	RLZ5.6B	D408		1
313		093G 39GA01 T	RLZ5.6B	D409		1
314		093G 39GA01 T	RLZ5.6B	D410		1
315		093G 39GA01 T	RLZ5.6B	D424		1
316		093G 39GA01 T	RLZ5.6B	D407		1
317		093G 39GA01 T	RLZ5.6B	D406		1
318		093G 39GA01 T	RLZ5.6B	D401		1
319		093G 39GA01 T	RLZ5.6B	D402		1
320		093G 39GA01 T	RLZ5.6B	D403		1
321		093G 39GA01 T	RLZ5.6B	D404		1
322		093G 39GA01 T	RLZ5.6B	D405		1
323		061G0402560	RST CHIP 56R 1/16W 5%	R486		1
324		061G0402560	RST CHIP 56R 1/16W 5%	R485		1
325		061G0402560	RST CHIP 56R 1/16W 5%	R484		1
326		065G0402105 05	MLCC 0402 1μF 6.3V X5R	C470		1
327		071G 56V301 B	CHIP BEAD FCM2012VF-301T07 bullwill	FB405		1
328		071G 56V301 B	CHIP BEAD FCM2012VF-301T07 bullwill	FB406		1
329		071G 56V301 B	CHIP BEAD FCM2012VF-301T07 bullwill	FB407		1
330		071G 56V301 B	CHIP BEAD FCM2012VF-301T07 bullwill	FB408		1
331		093G 6432P	LL4148	D425		1
332		715G2812 1	MAIN PCB			1
333		701G 150 N S	ABS 94HB			1.005
334		033G8019 6K H U	6P 1.0mm Pitch SMT Type FPC CONN	CN001		1
335		061G0603200 1F	RST CHIPR 2 KOHM +-1% 1/10W	R003		1
336		061G0603200 1F	RST CHIPR 2 KOHM +-1% 1/10W	R004		1
337		061G0603300 1F	RST CHIPR 3 KOHM +-1% 1/10W	R001		1
338		061G0603300 1F	RST CHIPR 3 KOHM +-1% 1/10W	R002		1
339		077G 604 2 TO	TACT 5W BY TOUKE TS-9-TMG-553	SW005		1
340		077G 604 2 TO	TACT 5W BY TOUKE TS-9-TMG-553	SW004		1
341		077G 604 2 TO	TACT 5W BY TOUKE TS-9-TMG-553	SW003		1
342		077G 604 2 TO	TACT 5W BY TOUKE TS-9-TMG-553	SW002		1
343		077G 604 2 TO	TACT 5W BY TOUKE TS-9-TMG-553	SW001		1

344		081G 14 12 GP	LED	LED01		1
345		093G 39S 34 T	UDZSNP5.6B ROHM	D101		1
346		093G 39S 34 T	UDZSNP5.6B ROHM	D102		1
347		715G2807 1	KEPC			1
348		061G 58100 W	RST NTCR 10 OHM +-20% 5A THINKING	NR901		1
349		096G 29 10	H.S. TUBE			10
350		051G 200 1	OIL FOR DISAPPEAR			0.2
351		057G 667 21	STP10NK70ZFP	Q900		1
352		090G6264 1	HEAT SINK	HS1		1
353		0M1G1730 8120	SCREW			1
354		051G 200 1	OIL FOR DISAPPEAR			0.2
355		090G6241 1 GP	HEAT SINK	HS5		1
356		093G 60276	DIODE SBT150-10LST SANYO	D920		1
357		0M1G1730 8120	SCREW			1
358		056G 379 22	IC TL494IDR SOIC-16	IC801		1
359		056G 379 61	LD7575PS SOP-8	IC901		1
360		057G 417 4	PMBS3904/PHILIPS-SMT(04)	Q902		1
361		057G 417 4	PMBS3904/PHILIPS-SMT(04)	Q811		1
362		057G 417 4	PMBS3904/PHILIPS-SMT(04)	Q810		1
363		057G 417 4	PMBS3904/PHILIPS-SMT(04)	Q803		1
364		057G 417 4	PMBS3904/PHILIPS-SMT(04)	Q807		1
365		057G 417 6	PMBS3906/PHILIPS-SMT(06)	Q806		1
366		057G 417 6	PMBS3906/PHILIPS-SMT(06)	Q805		1
367		057G 759 2	RK7002	Q812		1
368		057G 759 2	RK7002	Q808		1
369		057G 760 4B	PDTA144WK SOT346	Q801		1
370		057G 760 5B	PDTC144WK SOT346	Q802		1
371		057G 763 14	AM9945N	Q809		1
372		057G 763 14	AM9945N	Q804		1
373		061G0603000	RST CHIPR 0 OHM +-5% 1/10W	R832		1
374		061G0603000	RST CHIPR 0 OHM +-5% 1/10W	R830		1
375		061G0603000	RST CHIPR 0 OHM +-5% 1/10W	R804		1
376		061G0603000	RST CHIPR 0 OHM +-5% 1/10W	R801		1
377		061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W	R849		1
378		061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W	R848		1
379		061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W	R835		1
380		061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W	R834		1
381		061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W	R827		1
382		061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W	R807		1

383		061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W	R806		1
384		061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W	R853		1
385		061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W	R852		1
386		061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W	R840		1
387		061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W	R838		1
388		061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W	R824		1
389		061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W	R831		1
390		061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W	R833		1
391		061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W	R819		1
392		061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W	R808		1
393		061G0603101	RST CHIPR 100 OHM +-5% 1/10W	R813		1
394		061G0603103	RST CHIPR 10 KOHM +-5% 1/10W	R823		1
395		061G0603105	RST CHIPR 1 MOHM +-5% 1/10W	R836		1
396		061G0603105	RST CHIPR 1 MOHM +-5% 1/10W	R821		1
397		061G0603150 1F	RST CHIPR 1.5 KOHM +-1% 1/10W	R811		1
398		061G0603150 1F	RST CHIPR 1.5 KOHM +-1% 1/10W	R812		1
399		061G0603150 1F	RST CHIPR 1.5 KOHM +-1% 1/10W	R839		1
400		061G0603150 1F	RST CHIPR 1.5 KOHM +-1% 1/10W	R841		1
401		061G0603220	RST CHIPR 22 OHM +-5% 1/10W	R844		1
402		061G0603220	RST CHIPR 22 OHM +-5% 1/10W	R845		1
403		061G0603220	RST CHIPR 22 OHM +-5% 1/10W	R846		1
404		061G0603220	RST CHIPR 22 OHM +-5% 1/10W	R847		1
405		061G0603270 2F	RST CHIPR 27 KOHM +-1% 1/10W	R815		1
406		061G0603362	RST CHIPR 3.6 KOHM +-5% 1/10W	R803		1
407		061G0603470 2F	RST CHIPR 47 KOHM +-1% 1/10W	R842		1
408		061G0603470 2F	RST CHIPR 47 KOHM +-1% 1/10W	R828		1
409		061G0603472	RST CHIPR 4.7KOHM +-5% 1/10W	R805		1
410		061G0603473	RST CHIPR 47 KOHM +-5% 1/10W	R822		1
411		061G0603564	RST CHIPR 560 KOHM +-5% 1/10W	R820		1
412		061G0603680 2F	RST CHIPR 68 KOHM +-1% 1/10W	R829		1
413		061G0603680 2F	RST CHIPR 68 KOHM +-1% 1/10W	R816		1
414		061G0603750 2F	RST CHIPR 75KOHM +-1% 1/10W	R814		1
415		061G0805100 1F	RST CHIPR 1KOHM +-1% 1/8W	R930		1
416		061G0805100 1F	RST CHIPR 1KOHM +-1% 1/8W	R928		1
417		061G0805100 1F	RST CHIPR 1KOHM +-1% 1/8W	R927		1
418		061G0805100 1F	RST CHIPR 1KOHM +-1% 1/8W	R925		1
419		061G0805100 1F	RST CHIPR 1KOHM +-1% 1/8W	R913		1
420		061G0805100 2F	RST CHIPR 10KOHM +-1% 1/8W	R915		1
421		061G0805100 2F	RST CHIPR 10KOHM +-1% 1/8W	R923		1
422		061G0805100 3F	RST CHIPR 100KOHM +-1% 1/8W	R911		1

423		061G0805101	RST CHIPR 100 OHM +-5% 1/8W	R802		1
424		061G0805102	RST CHIPR 1KOHM +-5% 1/8W	R903		1
425		061G0805180 3F	RST CHIPR 180 KOHM +-1% 1/8W	R826		1
426		061G0805240 1F	RST CHIPR 2.4KOHM +-1% 1/8W	R929		1
427		061G0805330 2F	RST CHIPR 33 KOHM +-1% 1/8W	R926		1
428		061G0805331	RST CHIPR 330 OHM +-5% 1/8W	R922		1
429		061G0805360 1F	RST CHIPR 3.6KOHM +-1% 1/8W	R924		1
430		061G0805471	RST CHIPR 470 OHM +-5% 1/8W	R908		1
431		061G0805510 2F	RST CHIPR 51 KOHM +-1% 1/8W	R825		1
432		061G1206000	RST CHIPR 0 OHM +-5% 1/4W	J907		1
433		061G1206000	RST CHIPR 0 OHM +-5% 1/4W	J816		1
434		061G1206000	RST CHIPR 0 OHM +-5% 1/4W	J818		1
435		061G1206000	RST CHIPR 0 OHM +-5% 1/4W	J908		1
436		061G1206000	RST CHIPR 0 OHM +-5% 1/4W	J815		1
437		061G1206000	RST CHIPR 0 OHM +-5% 1/4W	J807		1
438		061G1206000	RST CHIPR 0 OHM +-5% 1/4W	J813		1
439		061G1206000	RST CHIPR 0 OHM +-5% 1/4W	J814		1
440		061G1206000 4	RST CHIPR 0 OHM +-5% 1/4W	F902		1
441		061G1206100	RST CHIP 10R 1/4W 5%	R912		1
442		061G1206103	RST CHIPR 10 KOHM +-5% 1/4W	ZD801		1
443		061G1206103	RST CHIPR 10 KOHM +-5% 1/4W	R905		1
444		061G1206103	RST CHIPR 10 KOHM +-5% 1/4W	R931		1
445		061G1206150	RST CHIPR 15 OHM +-5% 1/4W	R851		1
446		061G1206150	RST CHIPR 15 OHM +-5% 1/4W	R850		1
447		061G1206150	RST CHIPR 15 OHM +-5% 1/4W	R837		1
448		061G1206150	RST CHIPR 15 OHM +-5% 1/4W	R810		1
449		061G1206229	RST CHIPR 2.2 OHM +-5% 1/4W	R910		1
450		061G1206334	RST CHIPR 330KOHM +-5% 1/4W	R902		1
451		061G1206334	RST CHIPR 330KOHM +-5% 1/4W	R901		1
452		061G1206334	RST CHIPR 330KOHM +-5% 1/4W	R900		1
453		061G1206470	RST CHIPR 47 OHM +-5% 1/4W	R956		1
454		061G1206470	RST CHIPR 47 OHM +-5% 1/4W	R955		1
455		061G1206470	RST CHIPR 47 OHM +-5% 1/4W	R954		1
456		061G1206470	RST CHIPR 47 OHM +-5% 1/4W	R953		1
457		061G1206470	RST CHIPR 47 OHM +-5% 1/4W	R952		1
458		061G1206470	RST CHIPR 47 OHM +-5% 1/4W	R951		1
459		065G0603102 32	1000PF +-10% 50V X7R	C904		1
460		065G0603104 12	CER2 0603 X7R 16V 100N P	C804		1
461		065G0603104 12	CER2 0603 X7R 16V 100N P	C807		1
462		065G0603104 12	CER2 0603 X7R 16V 100N P	C814		1

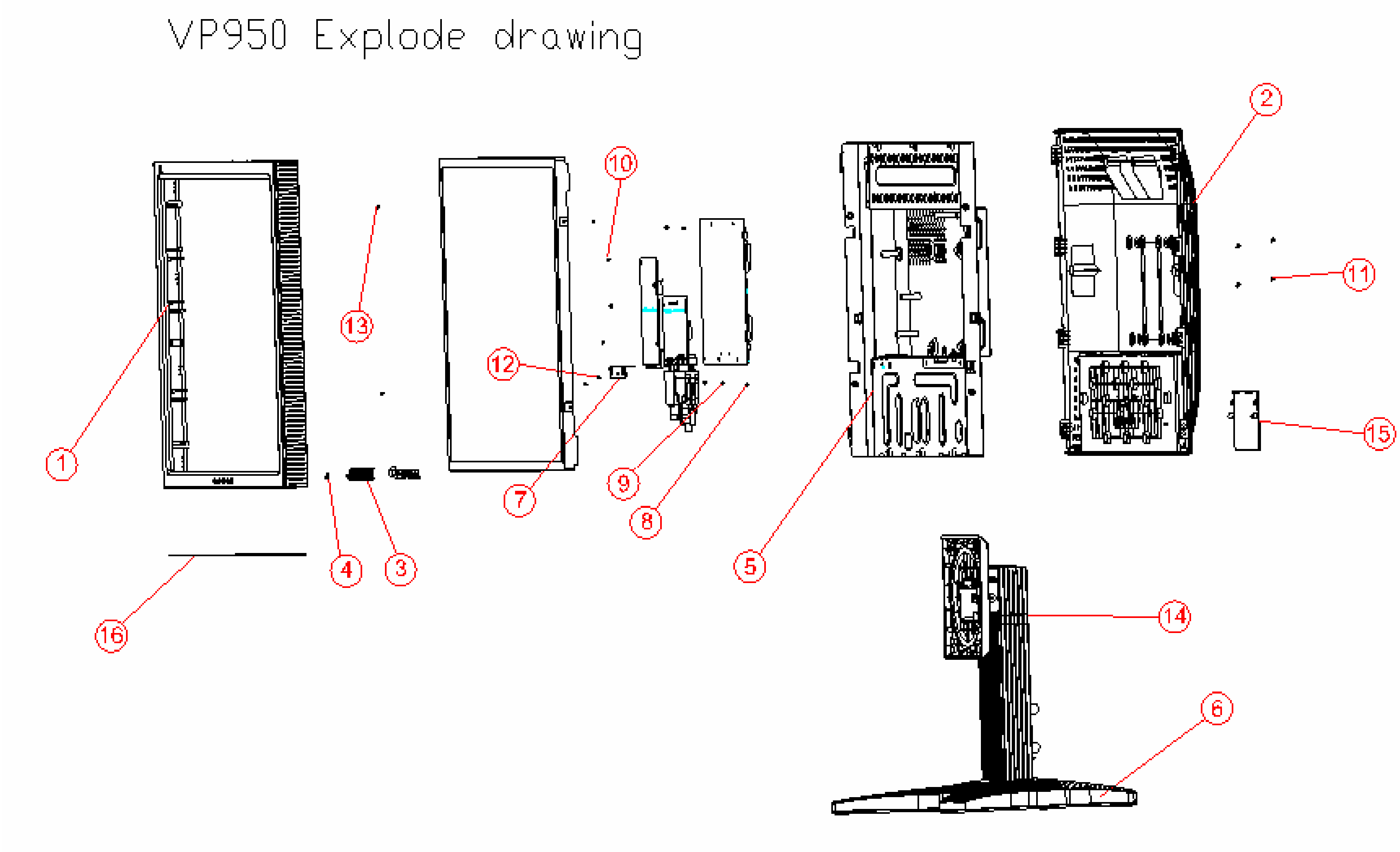
463		065G0603104 22	CHIP 0.1UF 25V X7R	C810		1
464		065G0603105 12	CHIP 1UF 16VX7R 0603	C802		1
465		065G0603105 12	CHIP 1UF 16VX7R 0603	C806		1
466		065G0603222 22	CHIP 2200PF 25V X7R	C813		1
467		065G0603222 22	CHIP 2200PF 25V X7R	C815		1
468		065G0603222 22	CHIP 2200PF 25V X7R	C817		1
469		065G0603222 22	CHIP 2200PF 25V X7R	C818		1
470		065G0805104 22	0.1UF +-10% 25V X7R 080	C824		1
471		065G0805104 22	0.1UF +-10% 25V X7R 080	C823		1
472		065G0805104 32	CHIP 0.1U 50V X7R	C931		1
473		065G0805104 32	CHIP 0.1U 50V X7R	C930		1
474		065G0805104 32	CHIP 0.1U 50V X7R	C929		1
475		065G0805104 32	CHIP 0.1U 50V X7R	C928		1
476		065G0805104 32	CHIP 0.1U 50V X7R	C916		1
477		065G0805104 32	CHIP 0.1U 50V X7R	C912		1
478		065G0805152 32	CHIP 1500PF 50V X7R 0805	C822		1
479		065G0805152 32	CHIP 1500PF 50V X7R 0805	C821		1
480		065G0805152 32	CHIP 1500PF 50V X7R 0805	C816		1
481		065G0805152 32	CHIP 1500PF 50V X7R 0805	C803		1
482		065G0805221 31	220PF 50V NPO	C913		1
483		065G080522131G	220PF 50V NPO 2%	C809		1
484		065G0805225 12	CHIP 2.2UF 16V X7R 0805	C808		1
485		065G0805471 21	CHIP 470PF 25V NPO	C914		1
486		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D810		1
487		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D809		1
488		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D802		1
489		093G 64 33	DIO SIG SM BAV99 (PHSE)R	D801		1
490		093G 64 38 D	DIODE BAW56 DIODES	D808		1
491		093G 64 38 D	DIODE BAW56 DIODES	D806		1
492		093G 39S 25 T	RLZ5.1B LLDS	ZD922		1
493		093G 39S 40 T	RLZ 13B LLDS	ZD921		1
494		093G 39S 40 T	RLZ 13B LLDS	ZD920		1
495		093G 64S511SEM	IN4148W	D813		1
496		093G 64S511SEM	IN4148W	D916		1
497		093G 64S511SEM	IN4148W	D915		1
498		093G 64S511SEM	IN4148W	D910		1
499		093G 64S511SEM	IN4148W	D812		1
500		093G 64S511SEM	IN4148W	D811		1
501		093G 64S511SEM	IN4148W	D807		1
502		093G 64S511SEM	IN4148W	D803		1

503		PW942HV2AIP	PWPC BOARD			1
504		056G 563 57	AP1510SA	U704		1
505		056G 585 4A	AP1117E33LA	U705		1
506		056G 659 9	IC USB2514-AEZG QFN-36	U701		1
507		061G 56A075 LT	SMD PTC 0.75A 1206L075.WR 1206	F704		1
508		061G 56A075 LT	SMD PTC 0.75A 1206L075.WR 1206	F703		1
509		061G 56A075 LT	SMD PTC 0.75A 1206L075.WR 1206	F702		1
510		061G 56A075 LT	SMD PTC 0.75A 1206L075.WR 1206	F701		1
511		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R733		1
512		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R732		1
513		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R731		1
514		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R730		1
515		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R723		1
516		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R722		1
517		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R715		1
518		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R712		1
519		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R703		1
520		061G0402000	RST CHIPR 0 OHM +-5% 1/16W	R702		1
521		061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	R766		1
522		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R734		1
523		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R728		1
524		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R725		1
525		061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	R708		1
526		061G0402104	RST CHIPR 100 KOHM +-5% 1/16W	R751		1
527		061G0402104	RST CHIPR 100 KOHM +-5% 1/16W	R720		1
528		061G0402104	RST CHIPR 100 KOHM +-5% 1/16W	R719		1
529		061G0402104	RST CHIPR 100 KOHM +-5% 1/16W	R718		1
530		061G0402104	RST CHIPR 100 KOHM +-5% 1/16W	R717		1
531		061G0402104	RST CHIPR 100 KOHM +-5% 1/16W	R716		1
532		061G0402104	RST CHIPR 100 KOHM +-5% 1/16W	R704		1
533		061G0402104	RST CHIPR 100 KOHM +-5% 1/16W	R701		1
534		061G0402105	RST CHIPR 1MOHM +-5% 1/16W	R724		1
535		061G0402115 2F	RST CHIPR 11.5kOHM +-1% 1/16W	R753		1
536		061G0402153	RST CHIP 15K 1/16W 5%	R709		1
537		061G0402153	RST CHIP 15K 1/16W 5%	R726		1
538		061G0402153	RST CHIP 15K 1/16W 5%	R729		1

539		061G0402153	RST CHIP 15K 1/16W 5%	R735		1
540		061G0402220 1F	RST CHIPR 2.2KOHM +-1% 1/16W	R754		1
541		061G0603120 2F	RST CHIPR 12 KOHM +-1% 1/10W	R721		1
542		061G0603360 1F	RST CHIPR 3.6 KOHM +-1% 1/10W	R750		1
543		061G0805000	0 OHM 1/10W	R755		1
544		065G0402103 12	CAP CHIP 0402 10N 16V X7R	C706		1
545		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C748		1
546		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C747		1
547		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C744		1
548		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C736		1
549		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C728		1
550		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C726		1
551		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C724		1
552		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C718		1
553		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C717		1
554		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C714		1
555		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C712		1
556		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C711		1
557		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C710		1
558		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C709		1
559		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C707		1
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561		065G0402104 15	MLCC 0402 0.1UF K 16V X5R	C703		1
562		065G0402220 31	CHIP 22PF 50V NPO	C713		1
563		065G0402220 31	CHIP 22PF 50V NPO	C708		1
564		065G0603104 32	CHIP 0.1UF 50V X7R	C733		1
565		065G0603105 12	CHIP 1UF 16VX7R 0603	C701		1
566		065G0603105 12	CHIP 1UF 16VX7R 0603	C720		1
567		065G0805475 A5	0805 4.7UF +-10% 10V X5R	C715		1
568		065G0805475 A5	0805 4.7UF +-10% 10V X5R	C719		1
569		065G1206106 05	CHIP 10UF/6.3V X5R	C745		1
570		071G 56K121	CHIP BEAD	FB706		1
571		071G 56K121	CHIP BEAD	FB704		1
572		071G 56K121	CHIP BEAD	FB703		1
573		071G 56K121	CHIP BEAD	FB702		1
574		071G 56K121	CHIP BEAD	FB701		1
575		093G 64 49 SU	DIODE ESD EGA 10603V05A1-B INPAQ	ZD710		1
576		093G 64 49 SU	DIODE ESD EGA 10603V05A1-B INPAQ	ZD709		1

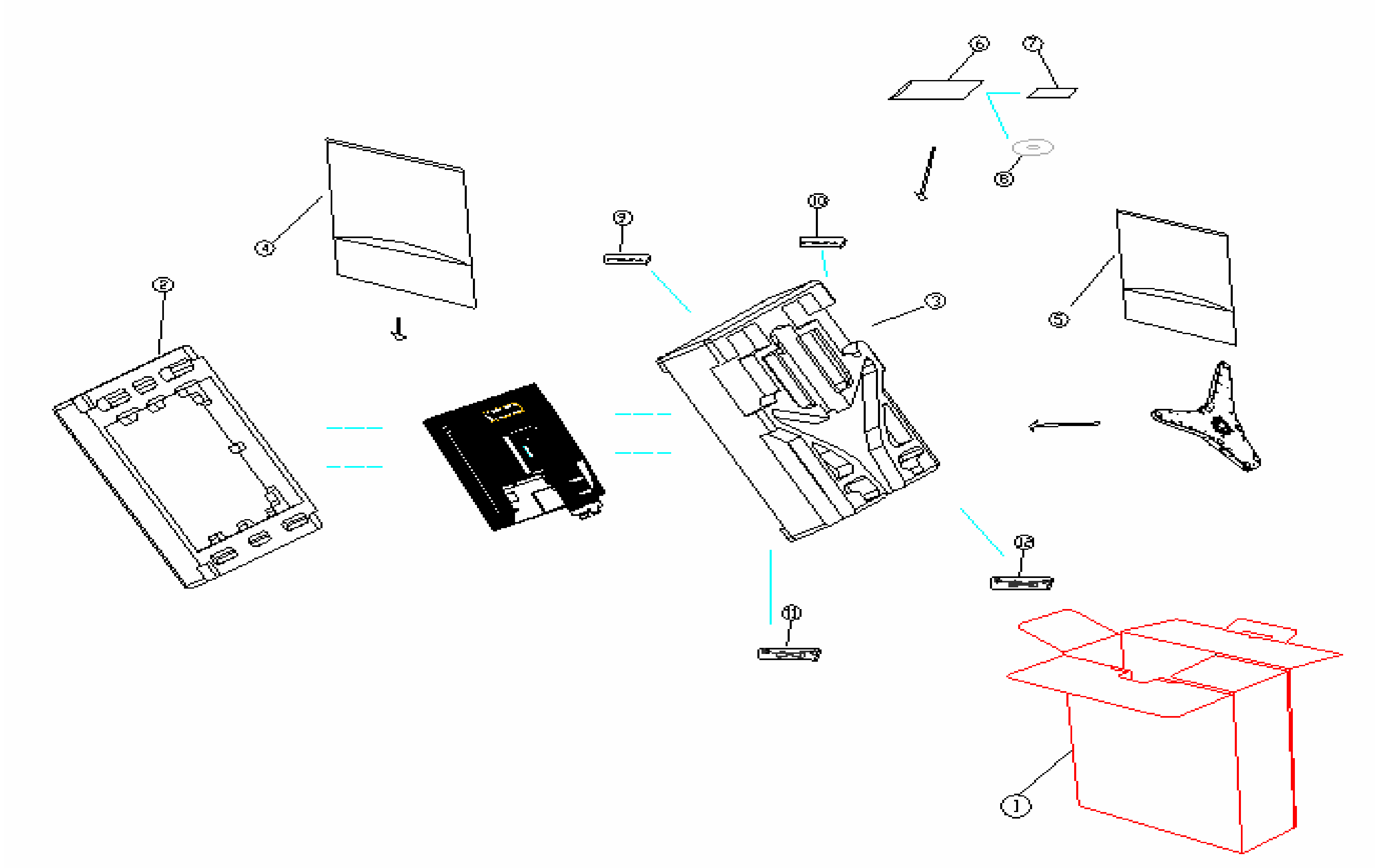
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580		093G 64 49 SU	DIODE ESD EGA 10603V05A1-B INPAQ	ZD705		1
581		093G 64 49 SU	DIODE ESD EGA 10603V05A1-B INPAQ	ZD704		1
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583		093G 64 49 SU	DIODE ESD EGA 10603V05A1-B INPAQ	ZD702		1
584		093G 64 49 SU	DIODE ESD EGA 10603V05A1-B INPAQ	ZD701		1
585		093G5004500	DIODE SM540A BY SECOS	D701		1
586		715G2829 1	USB PCB			1
587		006G 31 4	1.7MM RIVET	NR901		2
588		006G 31500	EYELET	CN901		2
589		006G 31502	1.5MM RIVET	T901		4
590		056G 158 12	KIA431A-AT/P TO-92	IC903		1
591		065G 2K152 1T6921	1.5NF/2KV Y5P +-10%	C910		1
592		065G517K102 5T	1000PF 10% Y5P 500V	C920		1
593		065G517K102 5T	1000PF 10% Y5P 500V	C921		1
594		067G 2152207NT	KY50VB22M-TP5 5*11	C911		1
595		071G 55 29	FERRITE BEAD	FB901		1
596		071G 55 29	FERRITE BEAD	FB903		1
597		084G 56 4W	FUSE 4.0A 250V	F901		1
598		084G 56 4W	FUSE 4.0A 250V	F903		1
599		093G 6038T52T	FR103	D901		1
600		093G1100 1152T	DIODE PR1007R 1A/1000V DO-41	D900		1
601		715G2594 2	POWER BOARD			1

8. Exploded Diagram And Spare Parts List



ITEM	part no.	part name	Qt"y
1	J34G8B16EC2C1B	bezel	1
2	J34G8B17EC2 3B	rear cover	1
3	J34G8B10EC2 1L	button	1
4	J33G8B11 1 1L	led-lens	1
5	J15G8B12-3	Main frame	1
6	J37G 006 2	base	1
7	J15G8B14-1	USB BKT	1
8	M1G1730-6-120	SCREW(power board & main frame)	4
9	M1G1740-8-120	SCREW(power board & main frame)	1
10	M1G1740-8-120	SCREW(USB / scalar board & main frame)	3
11	M1G940-12-47-CR3	SCREW(stand & VESA)	4
12	M1G330-4-120	screw (USB BKT & mainframe)	1
13	M1G330-6-120	screw (Panel & main frame)	4
14	J37G006-1	HINGE ASS`Y	1
15	J33G8B12EC2 1L	VP950 HINGE COVER	1
16	J52G8B01-1	MYLAR for VP950	1

Packing For Shipping



Item	P/N	Description	Qt"y
1	J44G9017709 1A	CARTON	1 PCS
2	J44G9020 1	EPS	1 PCS
3	J44G9020 2	EPS	1 PCS
4	J45G 88626 1 R	PE BAG FOR MONITOR	1 PCS
5	J45G 88606 6	PE BAG FOR BASE	1 PCS
6	J45G 76 28V3A	PE BAG FOR MANUAL-CARD	1 PCS
7	J41G780270912A	QSG	1 PCS
8	J70G1903709 3A	CD MANUAL	1 PCS
9	089G402A18N LS	POWER CABLE	1 PCS
10	089G 175 8	USB CABLE	1 PCS
11	089G 728HAA 1	SIGNAL CABLE	1 PCS
12	089G1748HAA AC	DVI CABLE	1 PCS

9. Disassemble Process

9.1 Units Disassemble Process

9.1.1 *Tools*



- ✧ Glove
- ✧ Big cross screwdriver
- ✧ Small cross screwdriver
- ✧ Prize equipment or abandoned IC card
- ✧ Screw box
- ✧ Cushion
- ✧ Six angle sleeve spanner

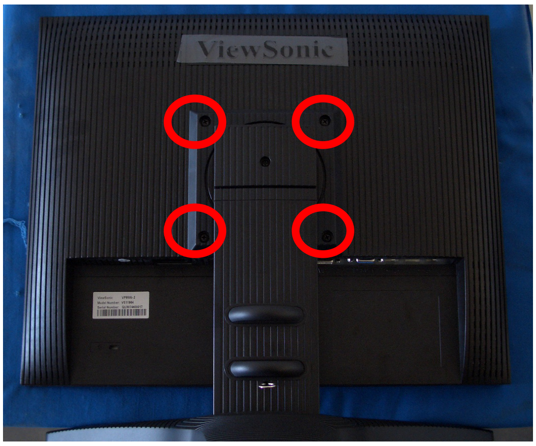
9.1.2 Disassemble process

1、 Tide up the worktable, spread straight cushion, put the monitor on it, the front side adown.(**Picture 1**)
2、 Disassemble the 4 screws that fix the stand, remove the stand. (**Picture 2, 3**)
3、 Use equipment or abandoned IC card to prize up the bezel through the bottom flute, and rip up the back cover downwards. refer to the following the **picture 4,5, 6,7**
4、 Remove the bezel, refer to the following **picture 8,9.**
5、 Disassemble the 4 pins of the backlight, as showed in the following the **picture 1011,12.**
6、 Disassemble the 4 fixed screws of the panel, as showed in the following the **picture13 ,14.**
7、 Lift up the main frame and lift down the FFC connectors according to the direction of the arrowhead, refer to the following **picture 15,16**.
8、 That's all. The disassemble process of the unit is over.

9.1.3 Show pictures:



（**Picture 1**）



（**Picture 2**）



（Picture 3）



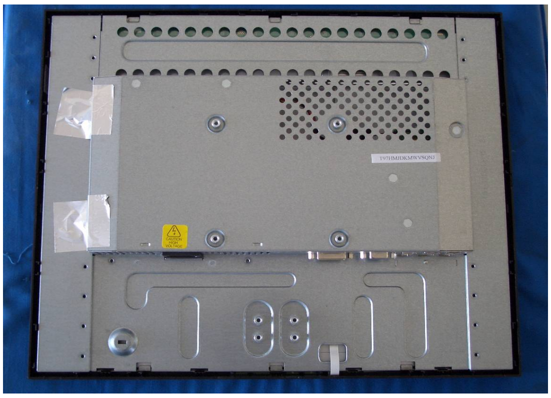
（Picture 4）



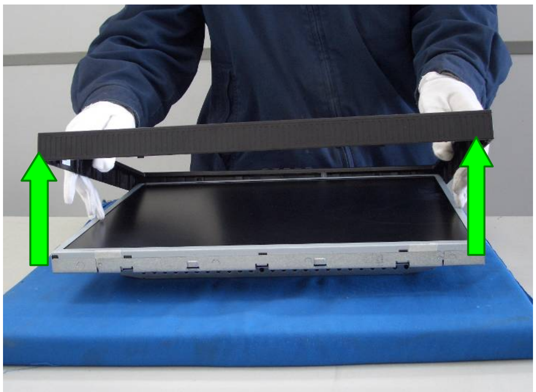
（Picture 5）



（Picture 6）



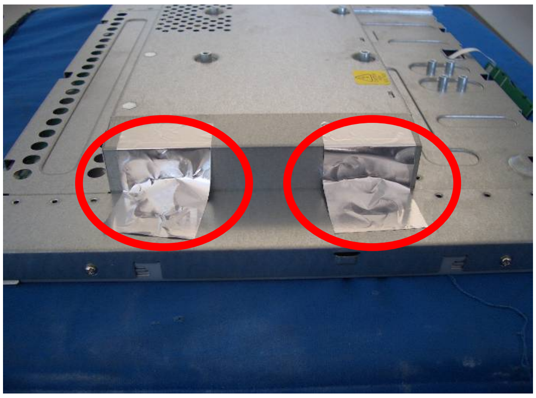
（Picture 7）



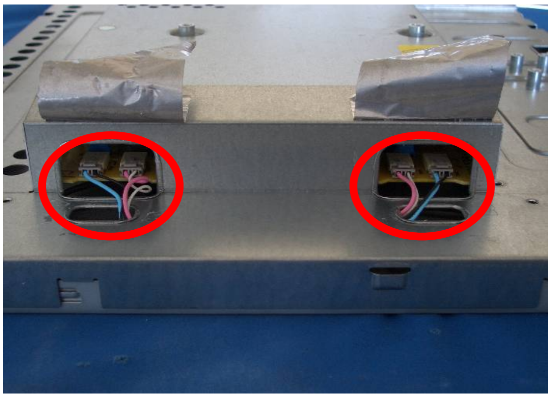
（Picture 8）



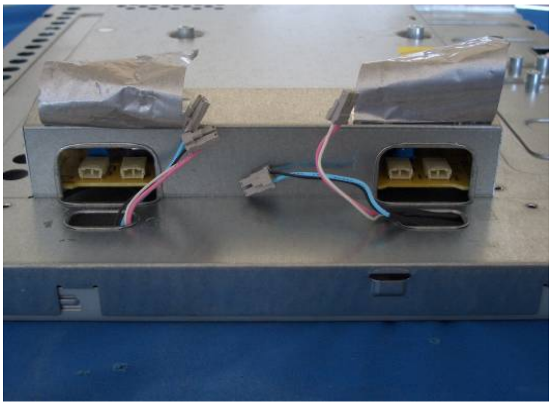
（Picture 9）



（Picture 10）



（Picture 11）



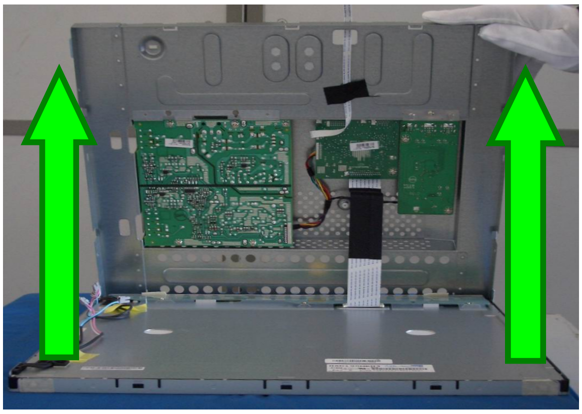
（Picture 12）



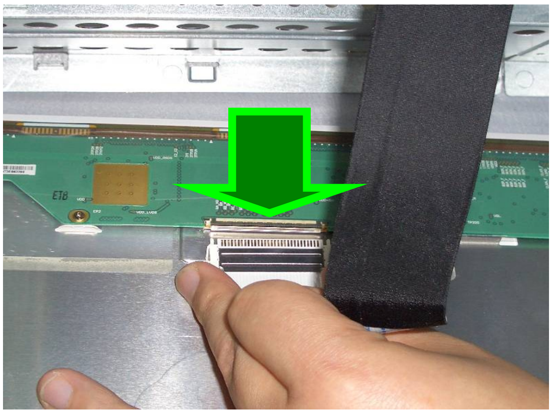
（Picture 13）



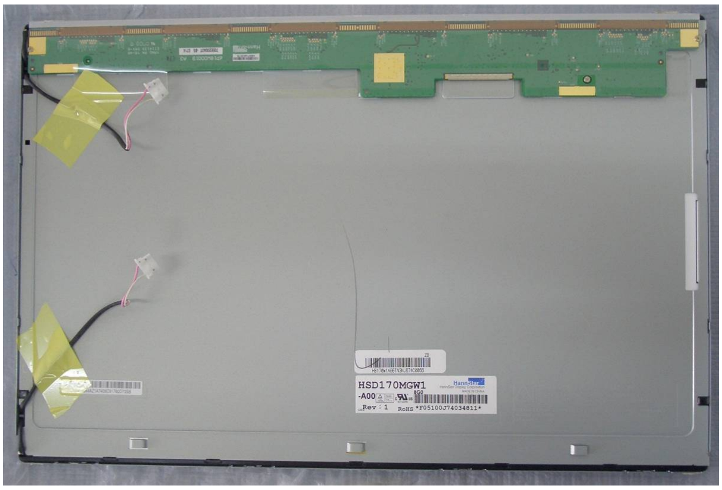
（Picture 14）



（Picture 15）

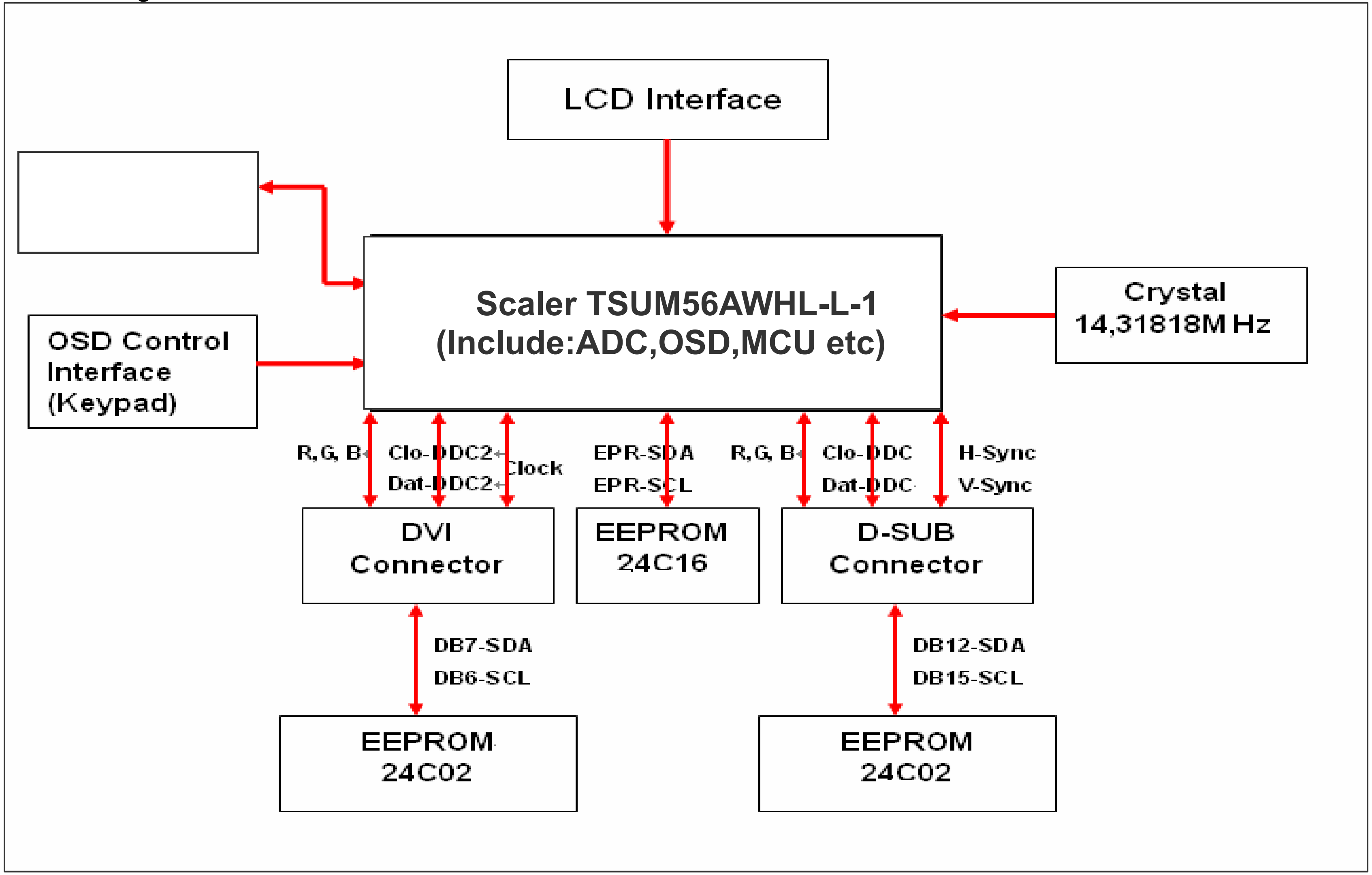


（Picture 16）



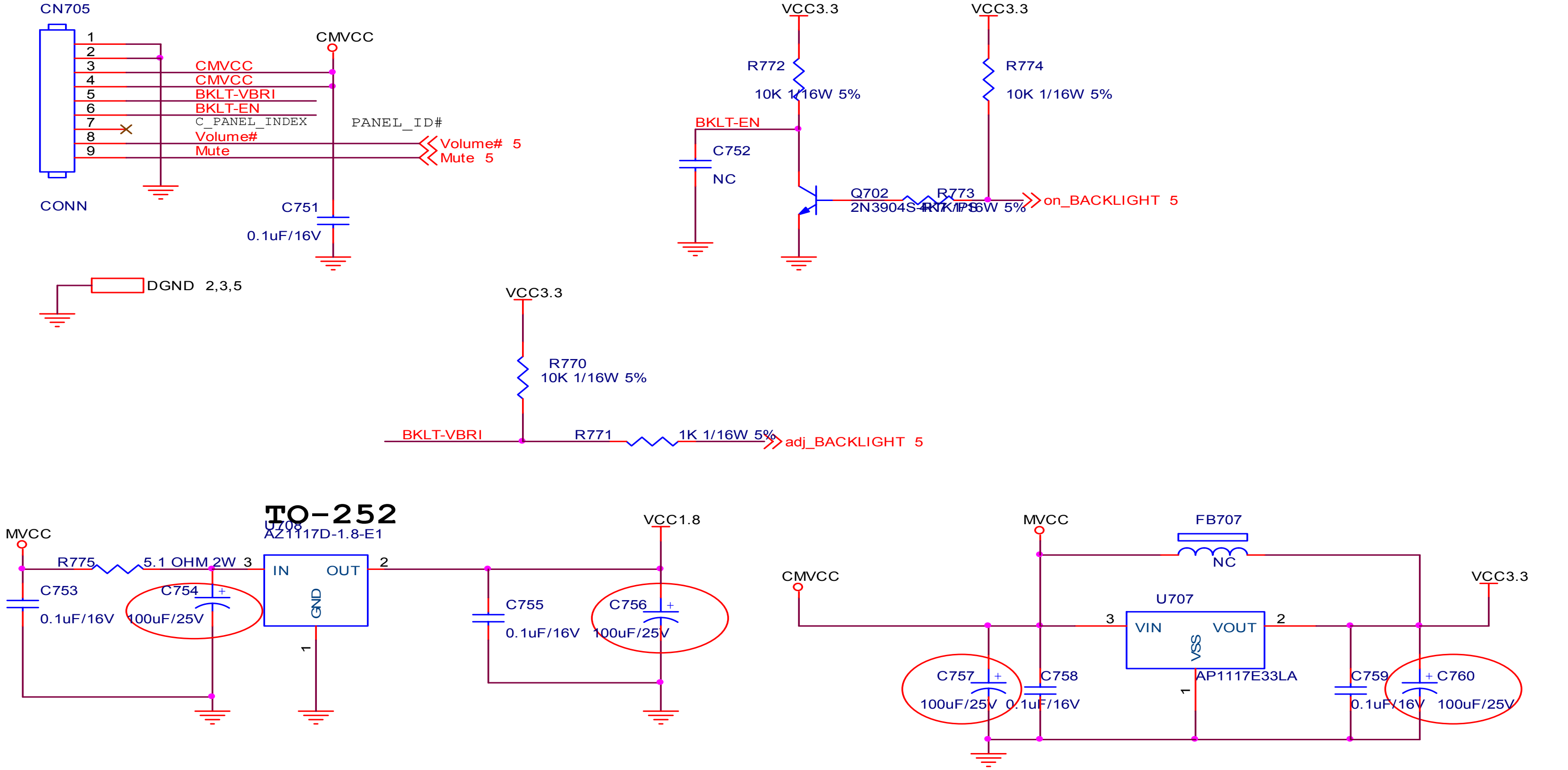
（Picture 17）

10. Block Diagram



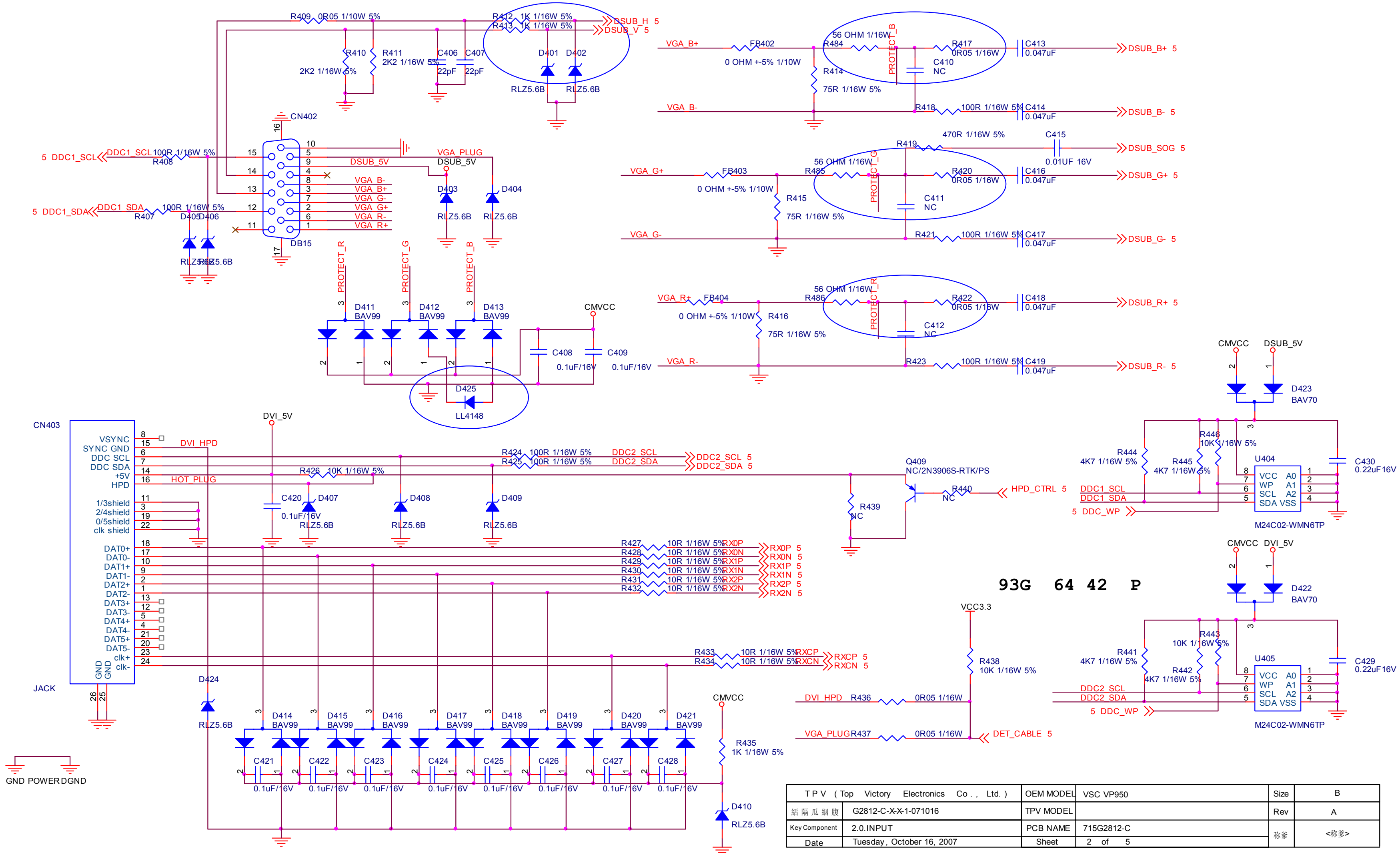
11. Schematic Diagram

11.1 Power



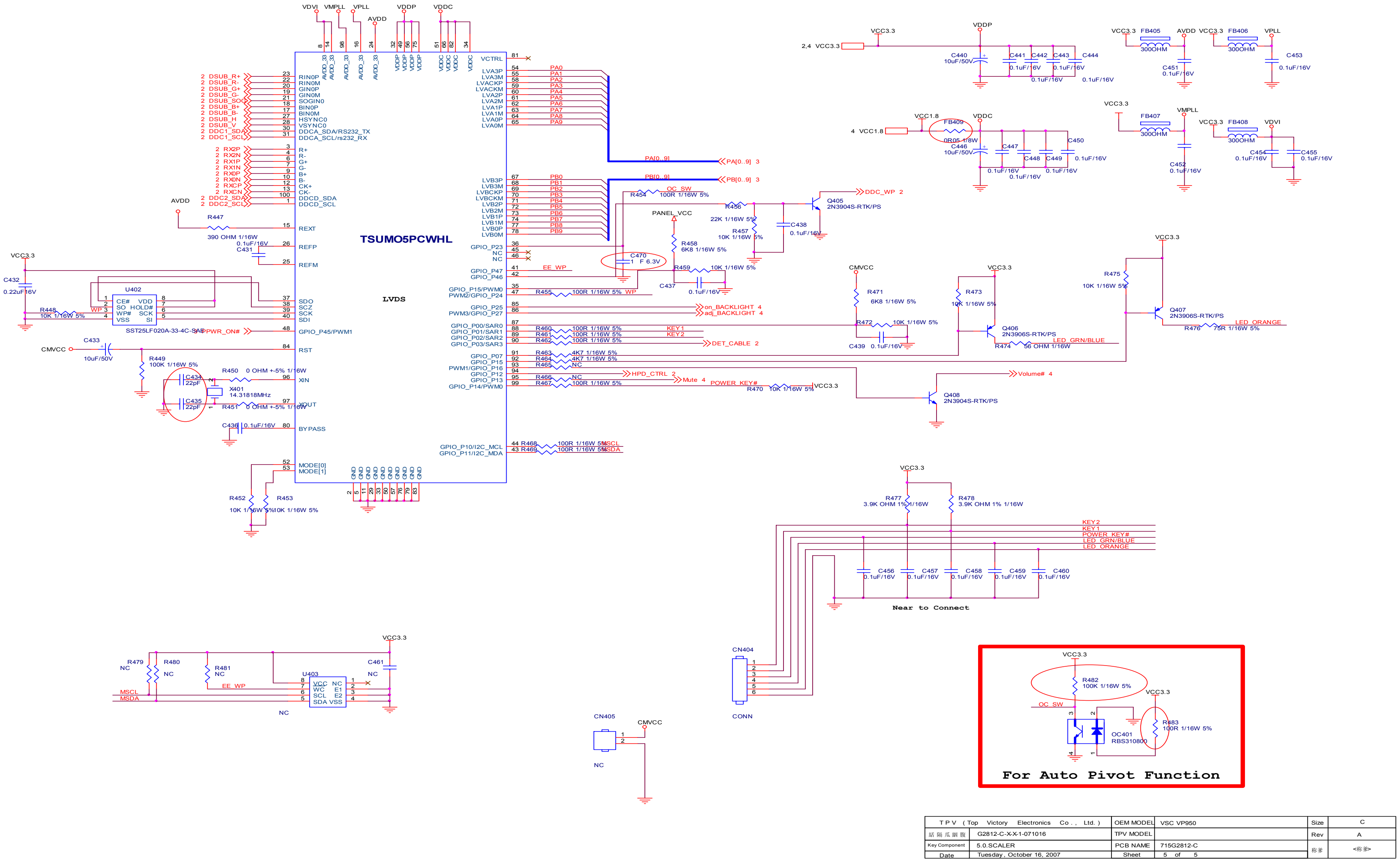
T P V (Top Victory Electronics Co . , Ltd.)		OEM MODEL	VSC VP950	Size	A
紶 隔 瓜 絪 腹	G2812-C-X-X-1-071016	TPV MODEL		Rev	A
Key Component	4.0.POWER	PCB NAME	715G2812-C	称爹	<称爹>
Date	Tuesday, October 16, 2007	Sheet	4 of 5		

11.2 Input

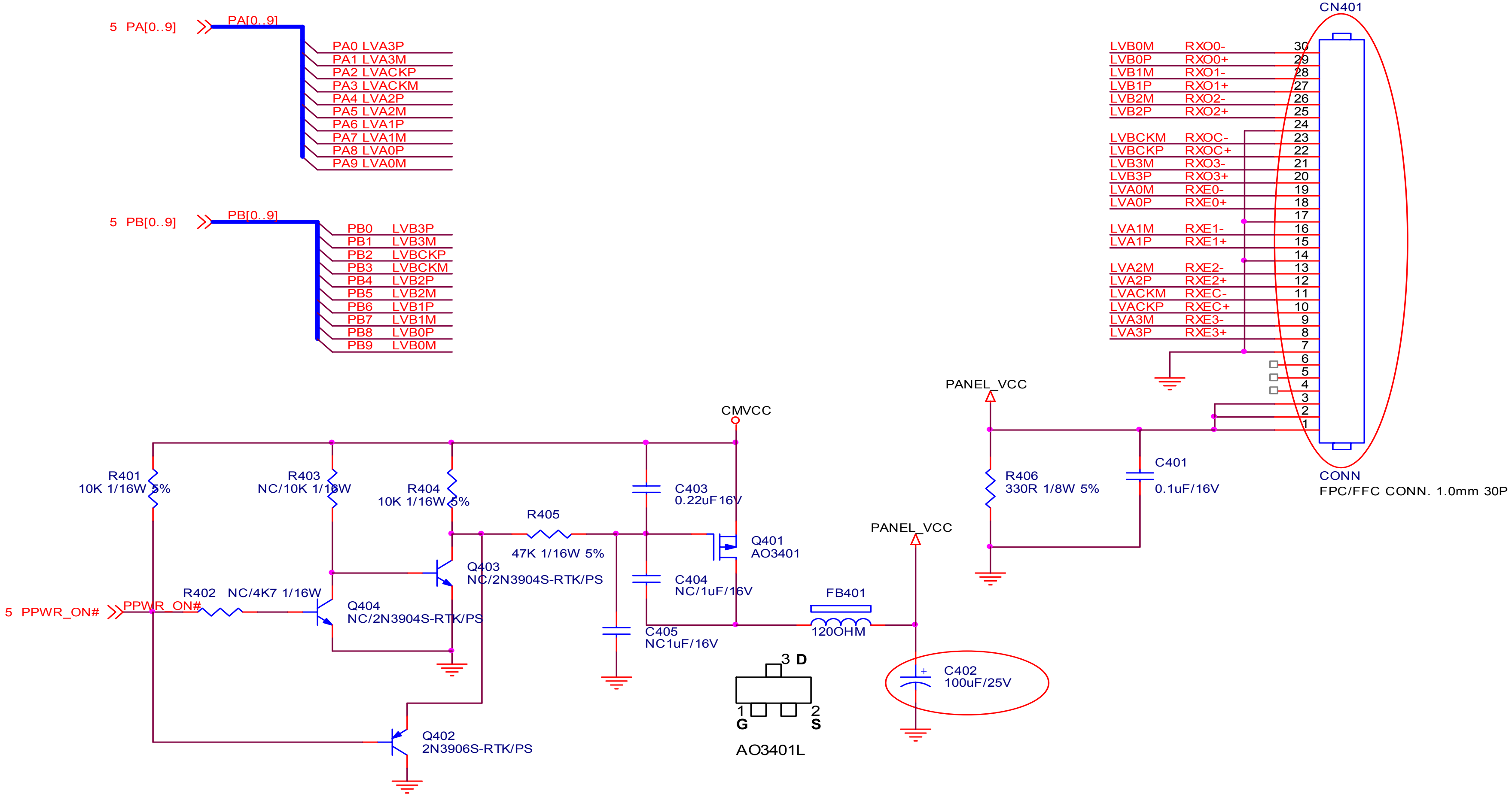


T P V (Top Victory Electronics Co . , Ltd.)		OEM MODEL	VSC VP950	Size	B
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Key Component	2.0.INPUT	PCB NAME	715G2812-C	称爹	<称爹>
Date	Tuesday, October 16, 2007	Sheet	2 of 5		

11.3 Scaler

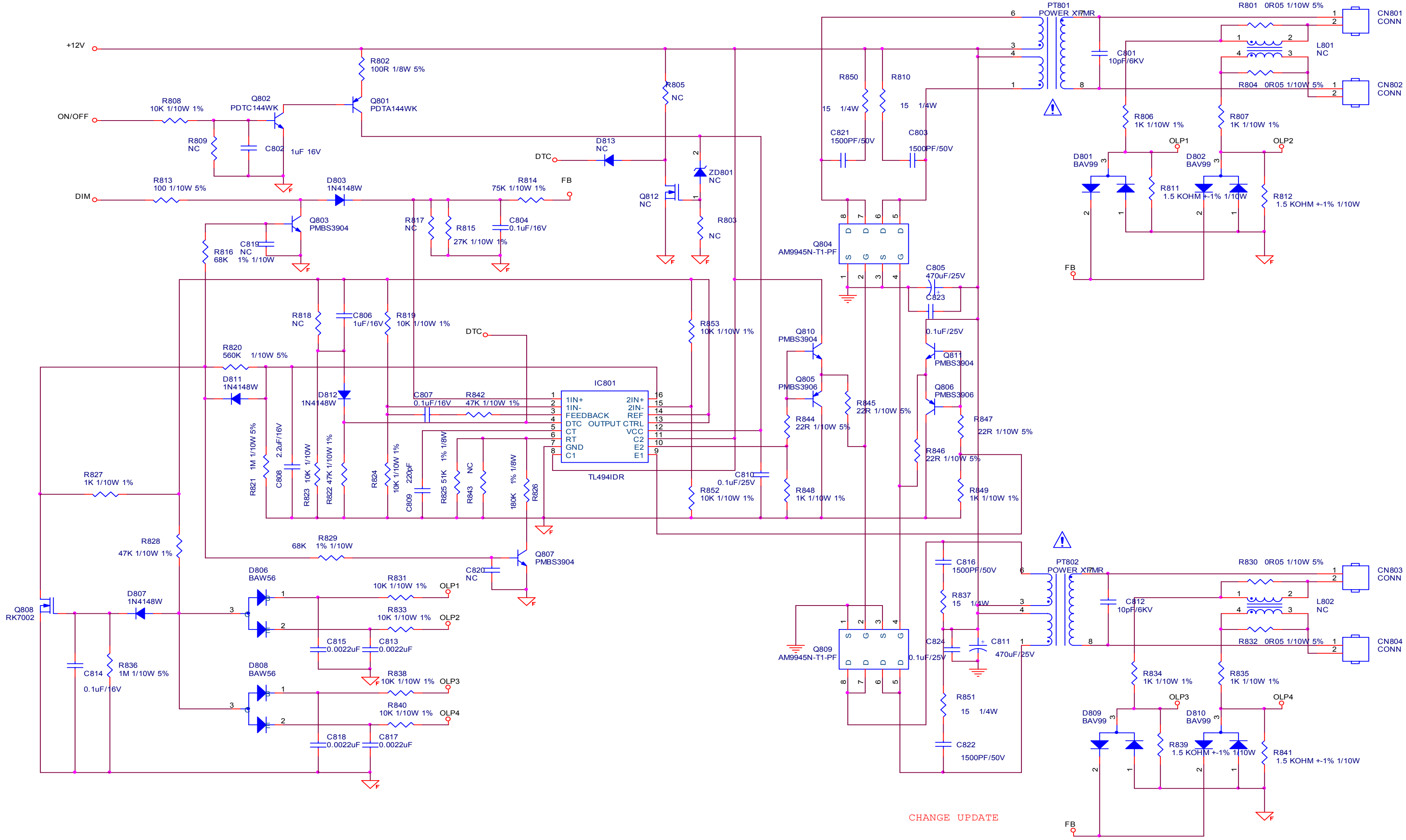


11.4 Panel Interface

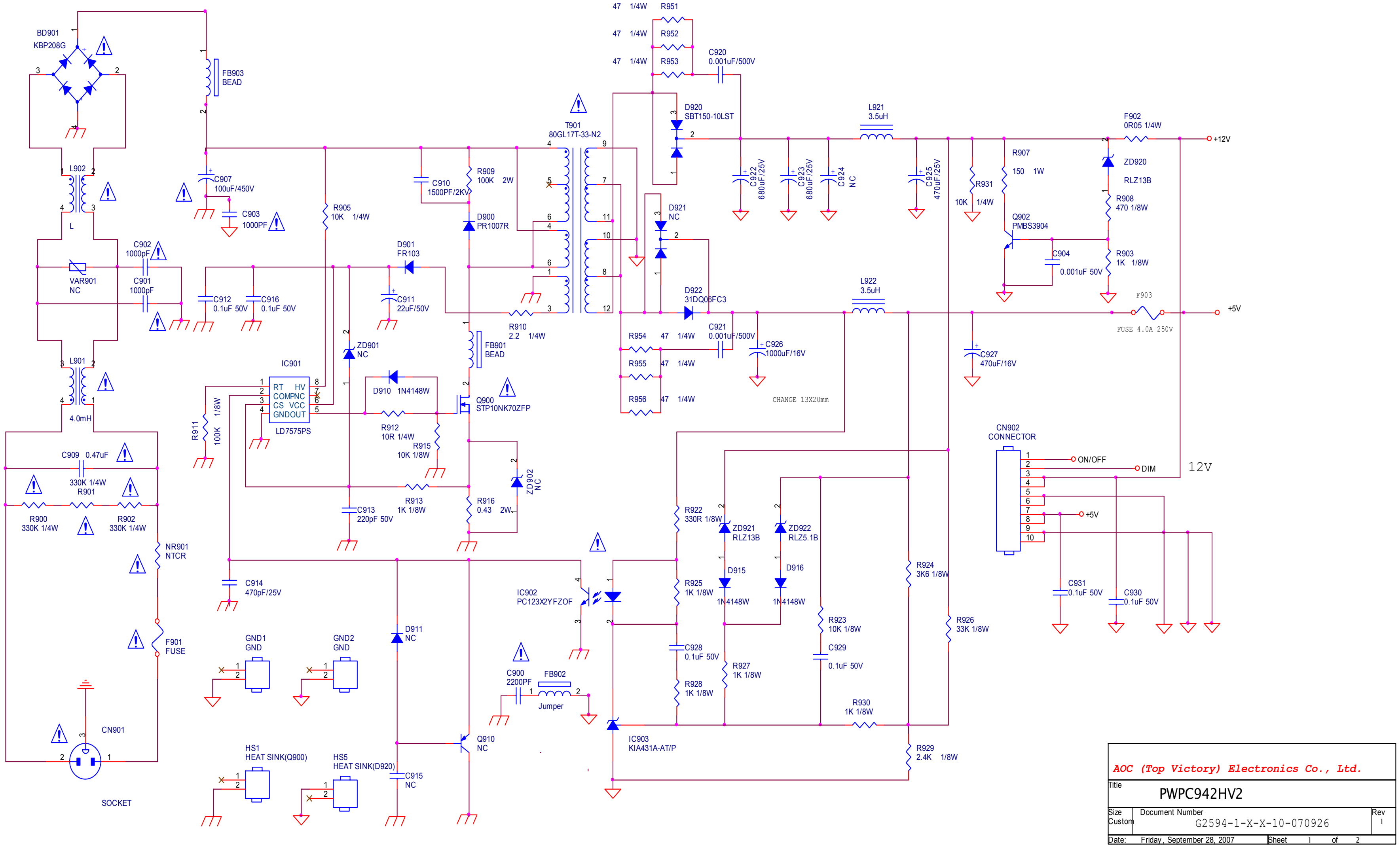


TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL	VSC VP950	Size	A
紐 隔 瓜 網 腹	G2812-C-X-X-1-071016	TPV MODEL		Rev	A
Key Component	3.0.OUTPUT	PCB NAME	715G2812-C	称爹	<称爹>
Date	Tuesday, October 16, 2007	Sheet	3 of 5		

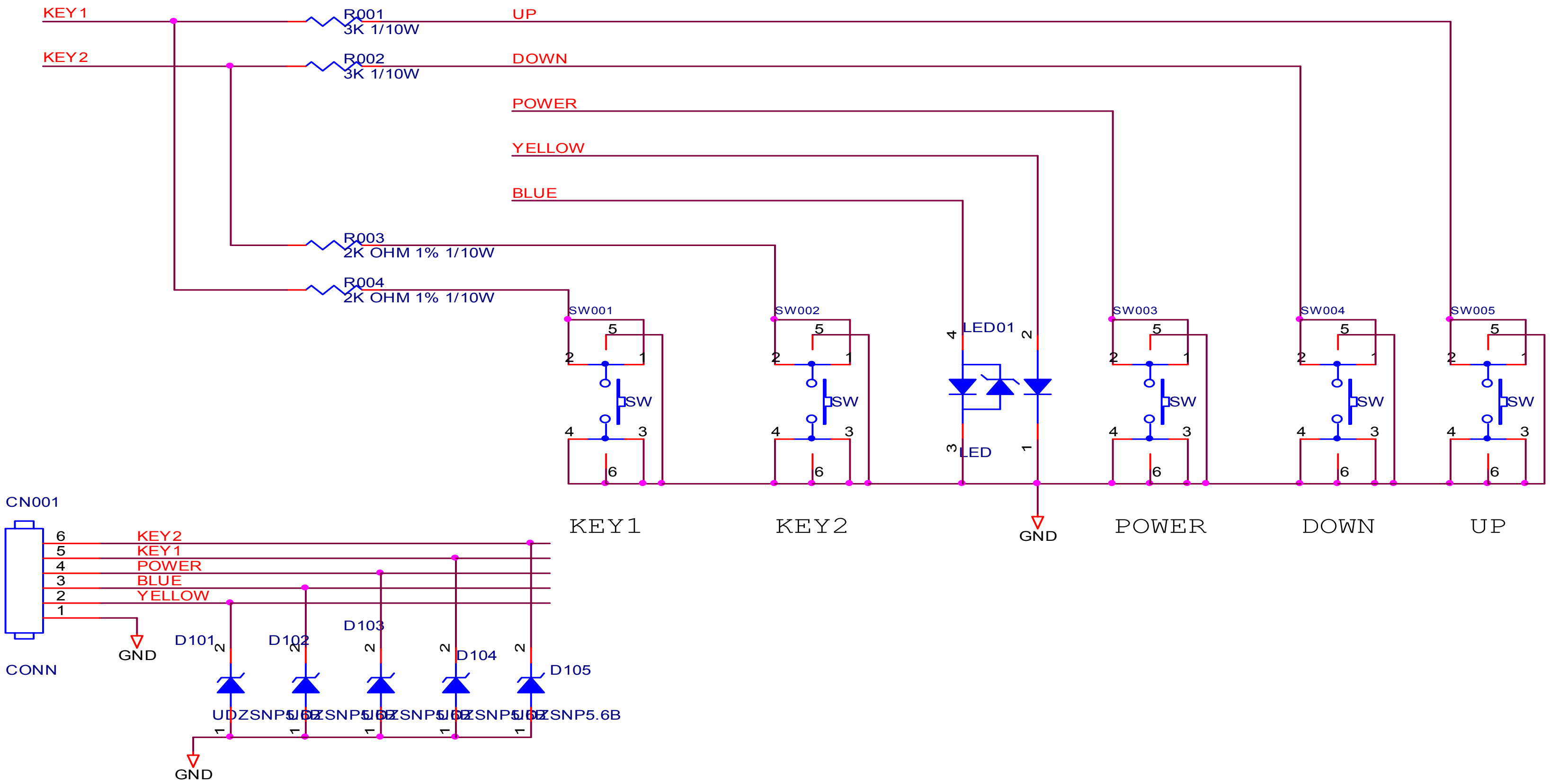
11.5 Inverter



11.6 A-D Power

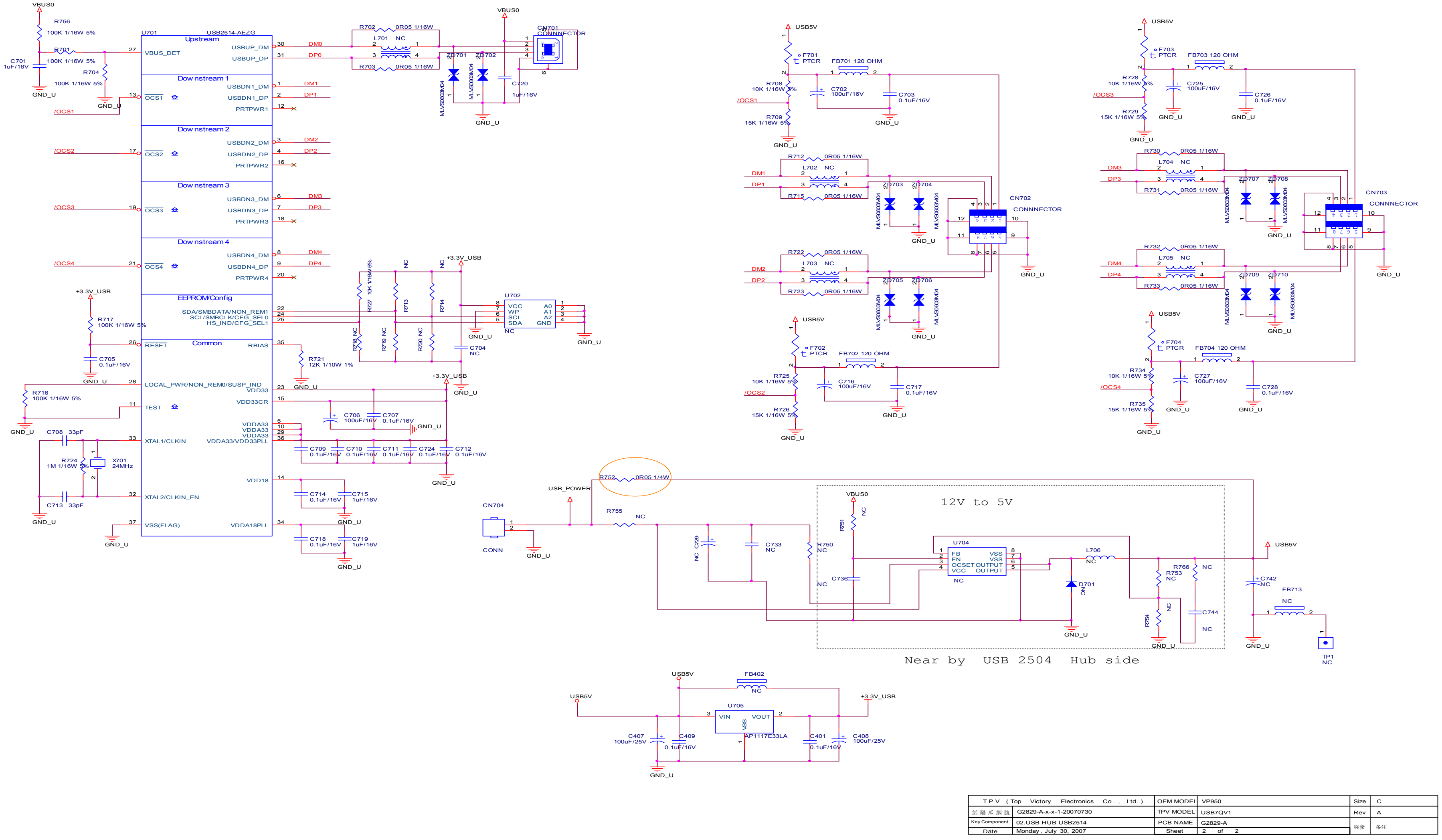

BD901
KBP208G
L902
L901
4.0mH
VAR901
NC
C902
1000pF
C901
1000pF
C909 0.47uF
330K 1/4W
R901
R900
330K 1/4W
R902
330K 1/4W
NR901
NTCR
F901
FUSE
CN901
SOCKET
FB903
BEAD
C907
100uF/450V
C903
1000PF
C912
0.1uF 50V
C916
0.1uF 50V
R905
10K 1/4W
R911
100K 1/8W
IC901
RT HV
COMPNC
CS VCC
GNDOUT
LD7575PS
C914
470pF/25V
GND1
GND
GND2
GND
HS1
HEAT SINK(Q900)
HS5
HEAT SINK(D920)
C910
1500PF/2KV
R909
100K 2W
D900
PR1007R
D901
FR103
C911
22uF/50V
ZD901
NC
D910 1N4148W
R912
10R 1/4W
R915
10K 1/8W
C913
220pF 50V
R913
1K 1/8W
Q900
STP10NK70ZFP
FB901
BEAD
R910
2.2 1/4W
R916
0.43 2W
ZD902
NC
D911
NC
Q910
NC
C915
NC
T901
80GL17T-33-N2
R951
R952
R953
47 1/4W
C920
0.001uF/500V
D920
SBT150-10LST
D921
NC
D922
31DQ06FC3
R954
R955
R956
C921
0.001uF/500V
C926
1000uF/16V
CHANGE 13X20mm
L921
3.5uH
L922
3.5uH
C922
680uF/25V
C923
680uF/25V
C924
NC
C925
470uF/25V
R931
10K 1/4W
R907
150 1W
Q902
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R903
1K 1/8W
F902
0R05 1/4W
+12V
F903
FUSE 4.0A 250V
+5V
C927
470uF/16V
IC902
PC123X2YFZOF
C900
2200PF
FB902
Jumper
IC903
KIA431A-AT/P
R922
330R 1/8W
ZD921
RLZ13B
ZD922
RLZ5.1B
D915
1N4148W
D916
1N4148W
R925
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C928
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R928
1K 1/8W
R927
1K 1/8W
R923
10K 1/8W
C929
0.1uF 50V
R930
1K 1/8W
R924
3K6 1/8W
R926
33K 1/8W
R929
2.4K 1/8W
CN902
CONNECTOR
ON/OFF
DIM
12V
+5V
C931
0.1uF 50V
C930
0.1uF 50V
AOC (Top Victory) Electronics Co., Ltd.
Title
PWPC942HV2
Size
Custom
Document Number
G2594-1-X-X-10-070926
Rev
1
Date: Friday, September 28, 2007
Sheet 1 of 2

11.7 Key Pad



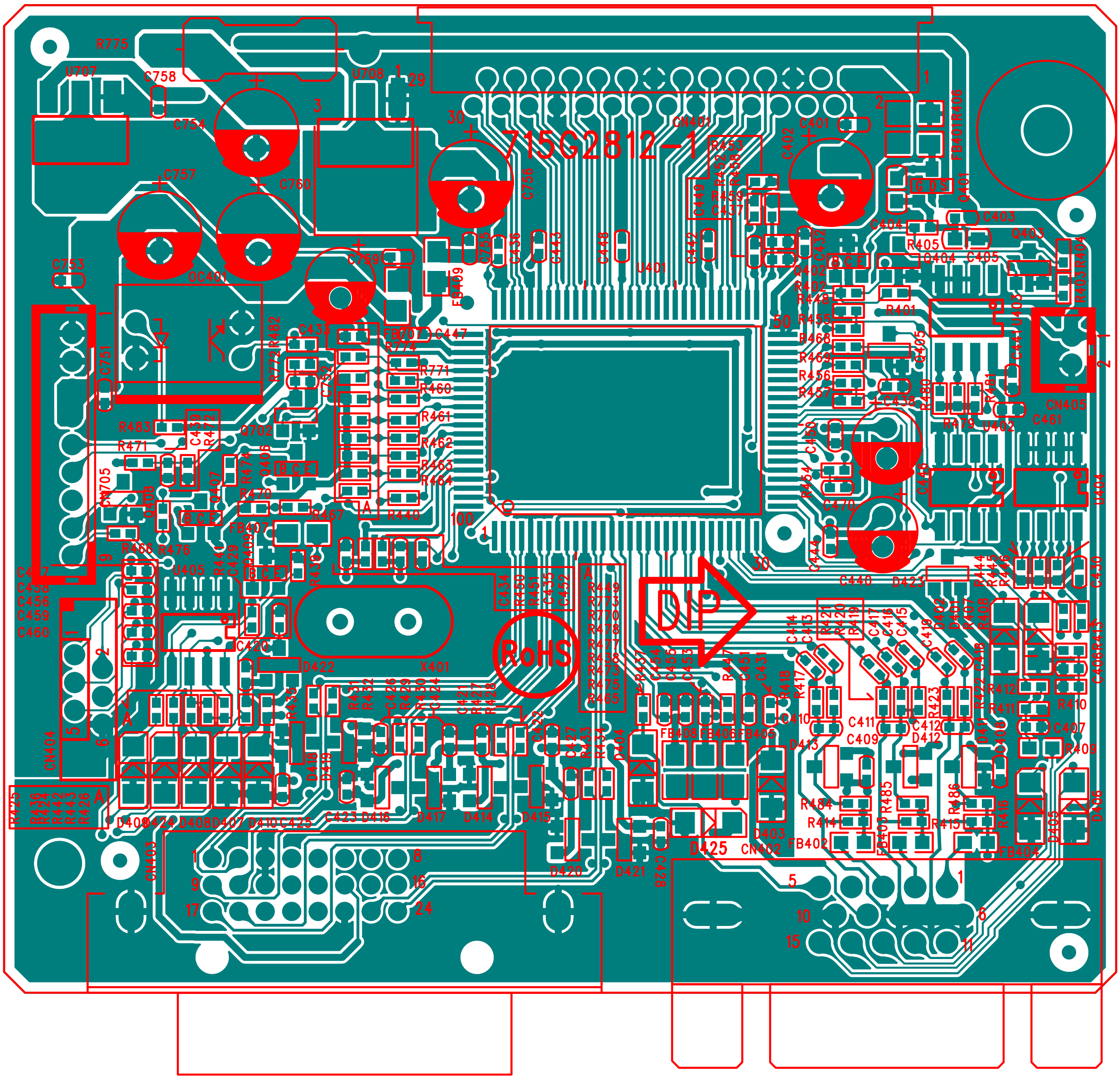
TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL	VSC VA916	Size	A
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Key Component	1. Key board	PCB NAME	715G2807-B	称爹	<称爹>
Date	Monday, July 30, 2007	Sheet	2 of 2		

11.8 USB

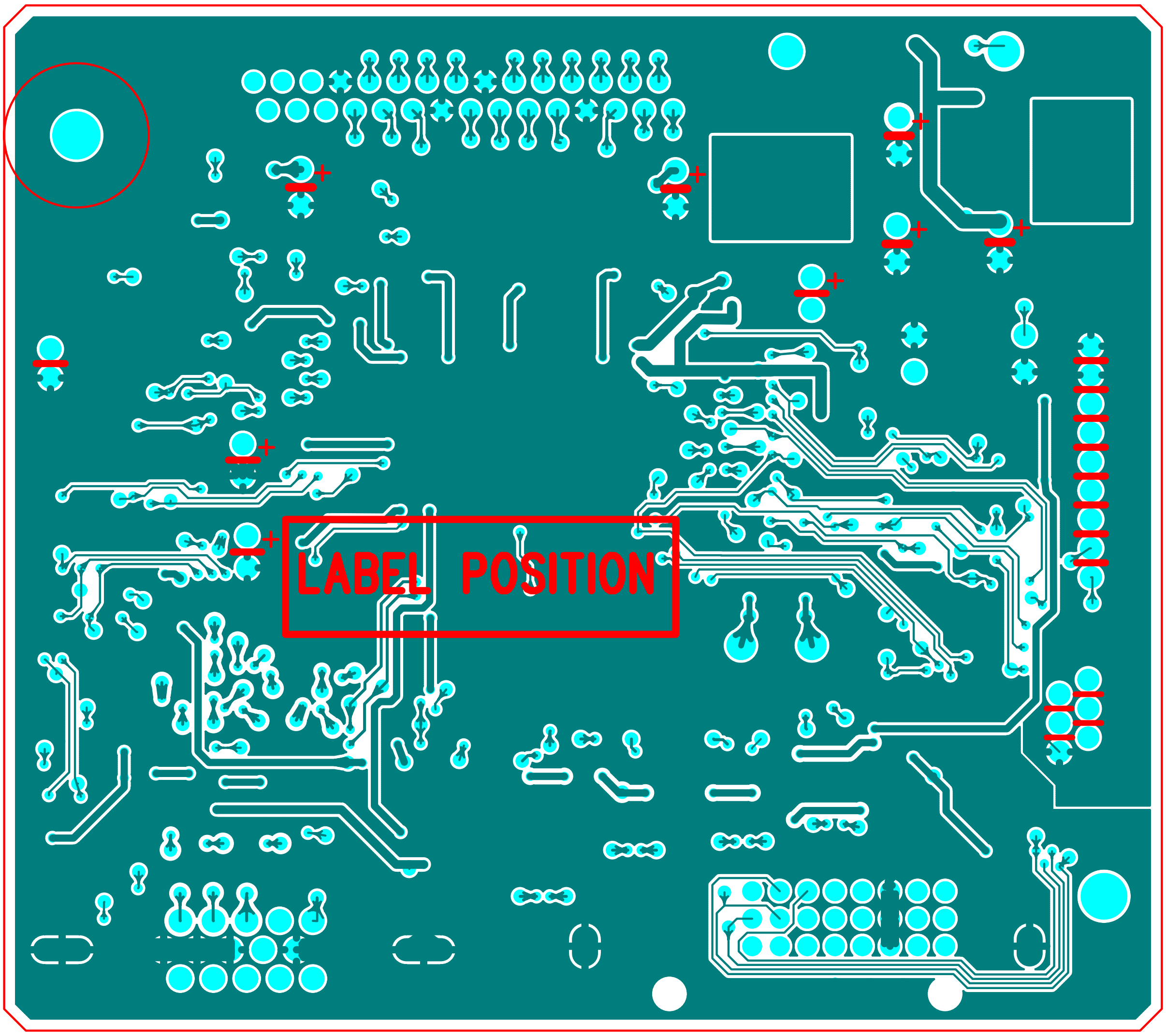


12. PCB Layout Diagram

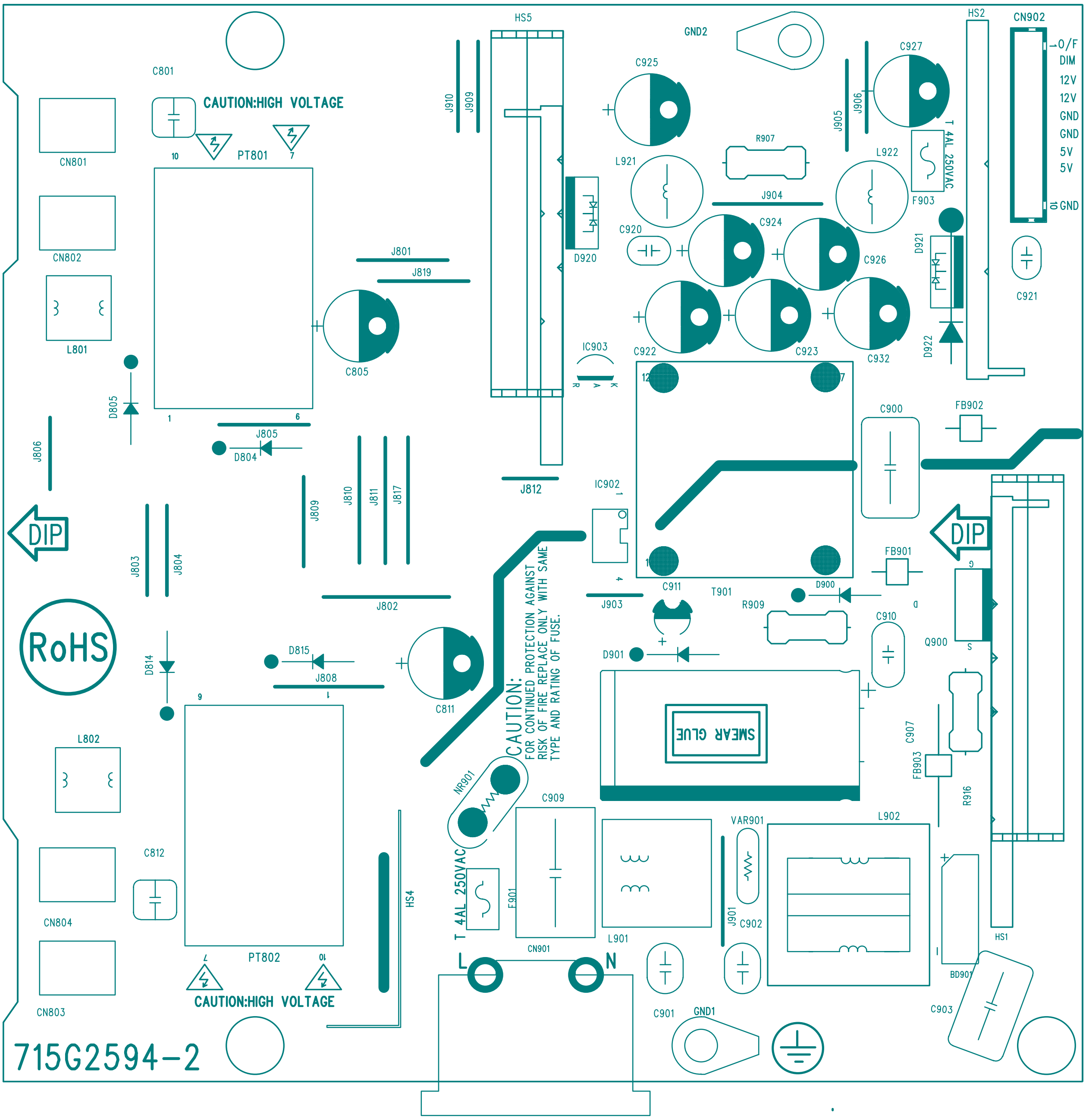
12.1 MAIN BOARD PCB TOP VIEW



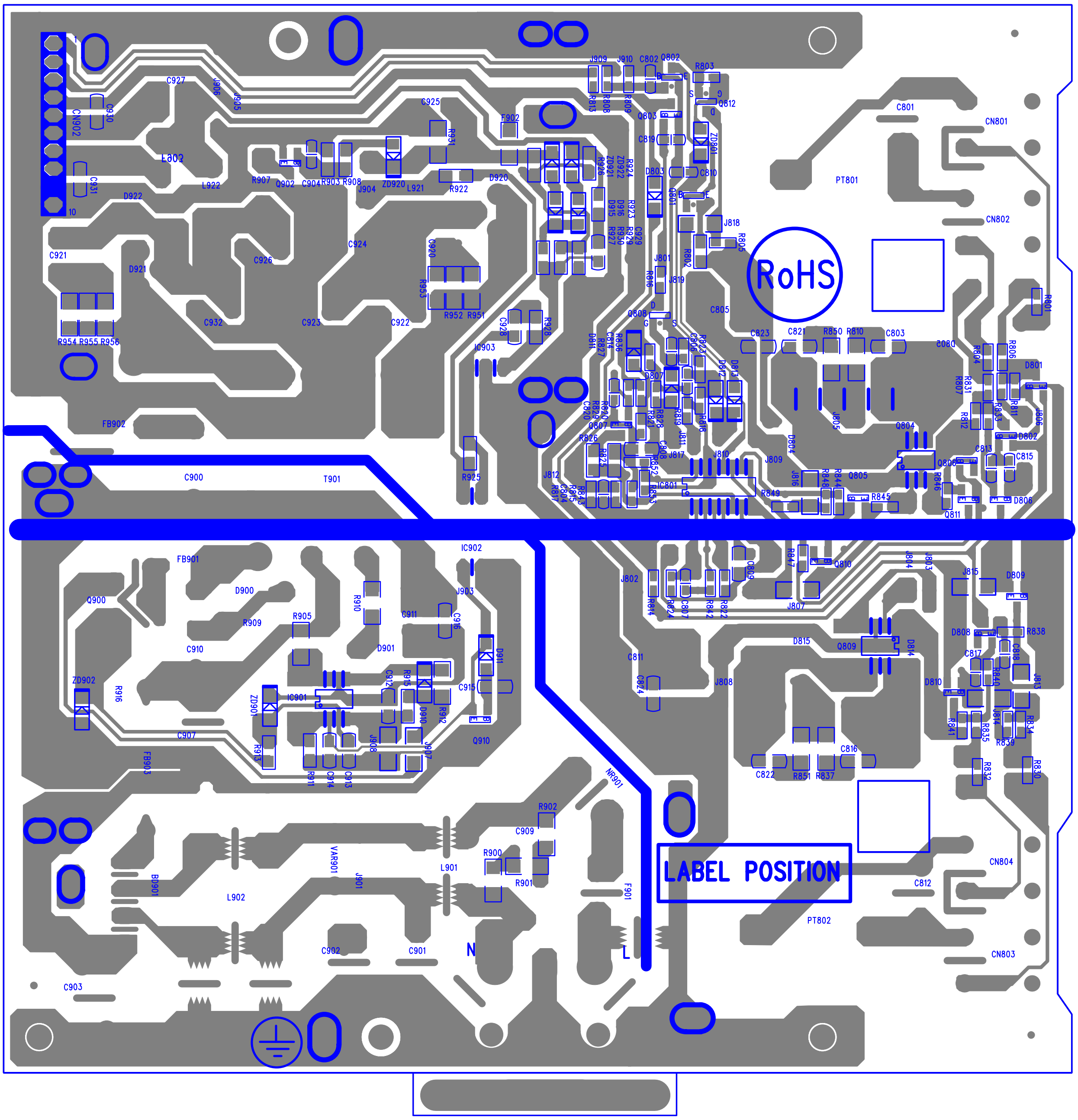
12.2 MAIN BOARD PCB BUTTON VIEW



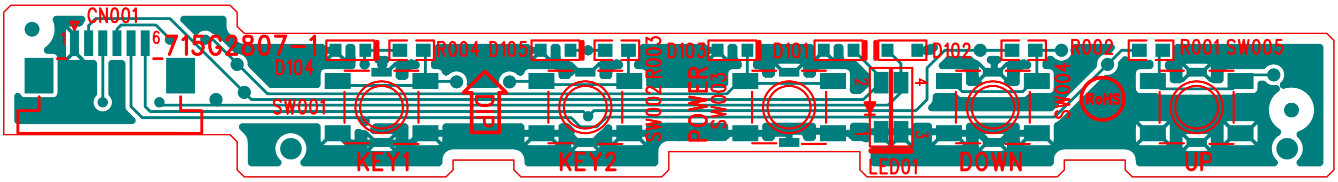
12..3 POWER PCB TOP VIEW



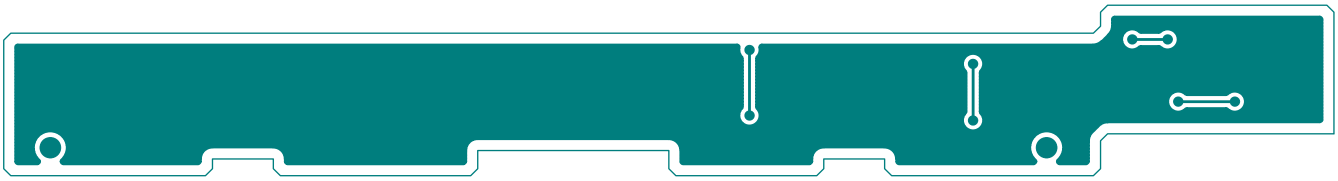
12.4 POWER PCB BUTTON VIEW



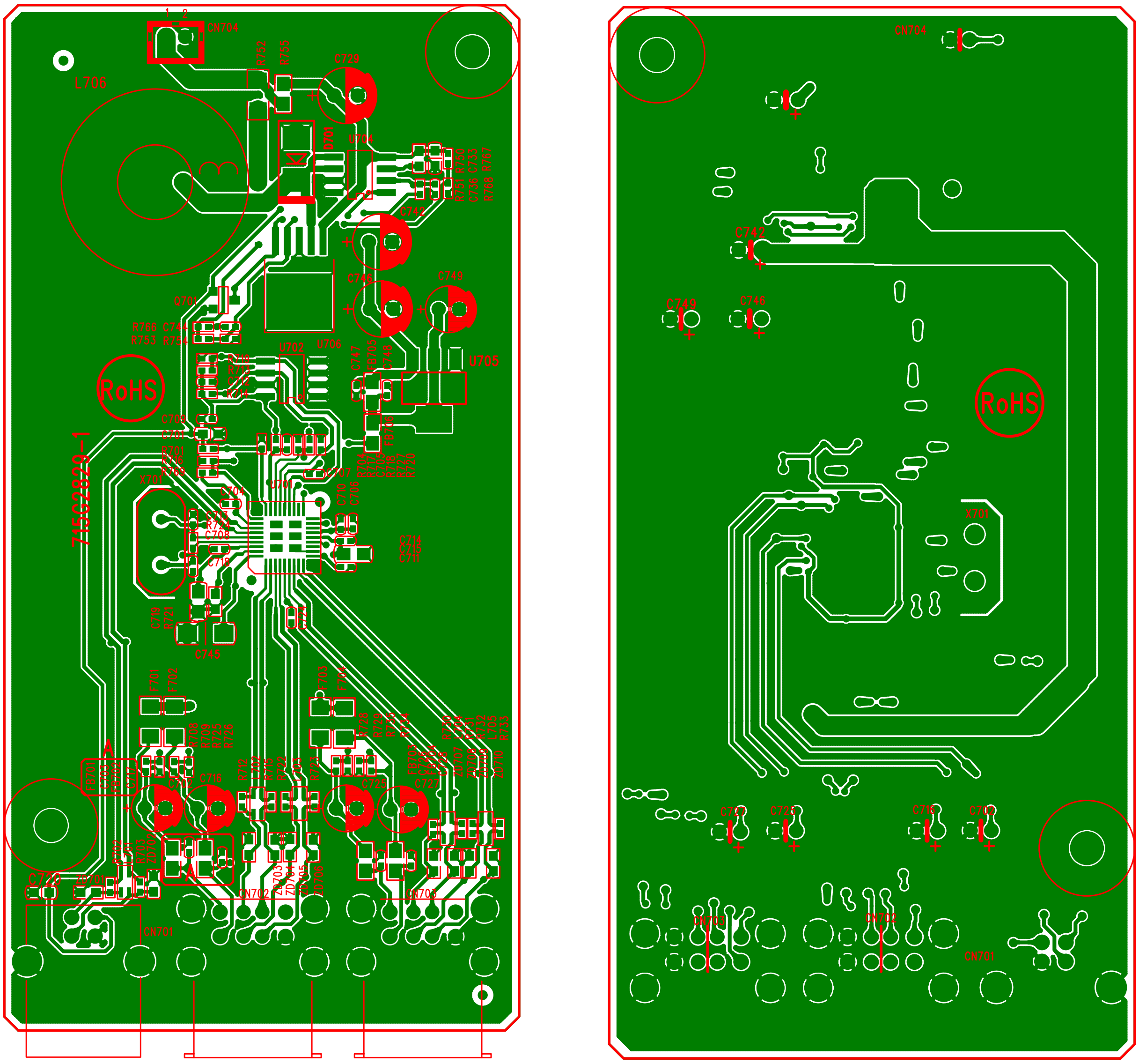
12.5 KEY BOARD TOP VIEW



12.6 KEY BOARD BUTTON VIEW



12.7 USB BOARD TOP VIEW & BUTTON VIEW



* *Reader's Response**

Dear Readers:

Thank you in advance for you feedback on our Service Manual, which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.

Assessment

A. What do you think about the content after reading **VP950b** Service Manual?

Unit	*Excellent*	*Good*	*Fair*	*Bad*
1. Precautions And Safety Notice				
2. Specification				
3. Front Panel Control and Indicators				
4. Circuit Description				
5. Adjustment Procedure				
6. Troubleshooting Flow Chart				
7. Recommended Spare Parts List				
8. Exploded Diagram And Spare Parts List				
9. Block Diagram				
10. Schematic Diagram				
11. PCB Layout Diagram				

B. Are you satisfied with the **VP950b** Service Manual?

Item	*Excellent*	*Good*	*Fair*	*Bad*
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C. Do you have any opinion and suggestion about this Service Manual?

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Company:			
Add:			
Tel:		Fax :	
E-Mail:			

After completing this form, please return it to ViewSonic Quality Assurance in the USA at facsimile 1-909-839-7943. You may also e-mail any suggestion to the Director, Quality System & Process (marc.maupin@viewsonic.com)